OMRON

PC Software

Smart Viewer RXW

ZR-RXW-SW

Software Manual

Cat. No. Z294-E1-02

Introduction

This manual provides information regarding functions, performance and operating methods that are required for using the PC software "Smart Viewer RXW".
When using the Smart Viewer RXW, be sure to observe the following:
•To ensure correct use, please read this manual thoroughly to deepen your understanding of the product.
•Please keep this manual in a safe place so that it can be referred to whenever necessary.

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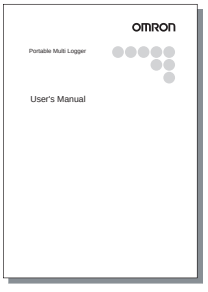
Type of Manuals

The manuals of the Smart Viewer RXW series consist of the following.
Select the manual suitable for your purpose and read it before starting operation.

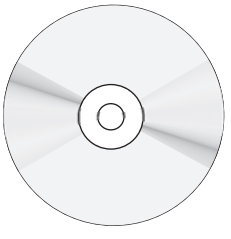
Manual packaged in the product (brochure)



User's Manual

· Information for safe and correct use
· Before use: connection and wiring in details, language change of display, etc.
· Procedure in details for setting and measurement
· Specifications of the ZR-RX25,ZR-RX45 series and accessories
· Other information which is required for the use of the ZR-RX25, ZR-RX45 series

Manuals contained in the utility CD-ROM (pdf data)



Software Manual (this manual)

Information for installing PC software, basic operation, explanation of screen and setting methods is described.

User's Manual

Same contents as the above referenced "User's Manual" packaged in the product.

Software Manual

PC Software
Smart Viewer RXW

ZR-RXW-SW

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Editor's Note

■Meaning of Symbols

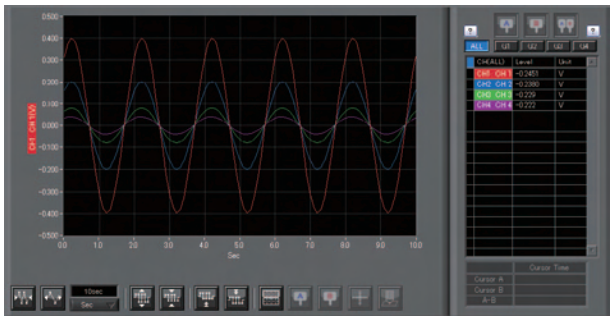
Menu items that are displayed on the Controller's LCD screen, and windows, dialog boxes and other GUI elements displayed on the PC are indicated enclosed by brackets "[ ]".

■Visual Aids

Important	Indicates points that are important to achieve the full product performance, such as operational precautions.
Note	Indicates application procedures.
	Indicates pages where related information can be found.

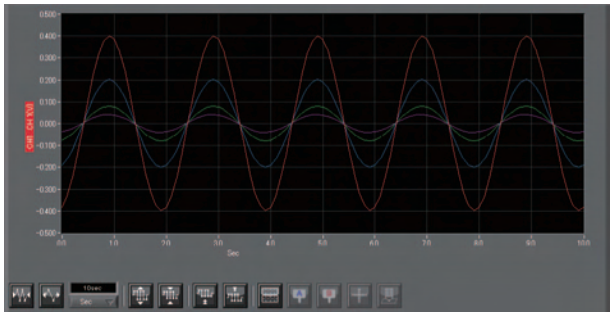
A Variety of Display Formats

Y-T View, Y-T Expanded View, Digital View, Report View are available. A large, easy-to-see screen is the characteristic of this unit.



Y-T View

This graph shows data with the input signal levels on the Y-axis and the time on the X-axis. It can display a waveform and digital values of each channel at the same time. The control icons in the lower part of the screen allow you to scale up and down the time axis, X-axis, etc. This graph can be displayed in two or five split screens, each showing different signals.

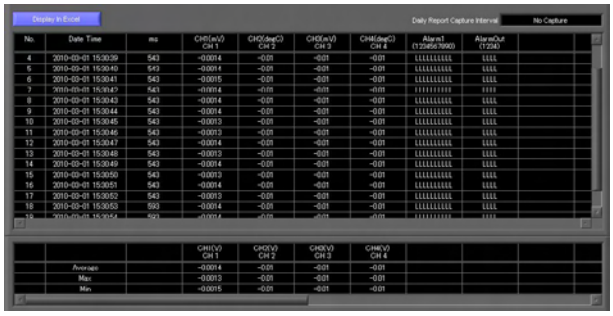


Y-T Zoom View

Displays waveforms along an expanded time axis while hiding digital values.

Digital View

Displays digital values of each channel in a large, easy-to-read numbers.

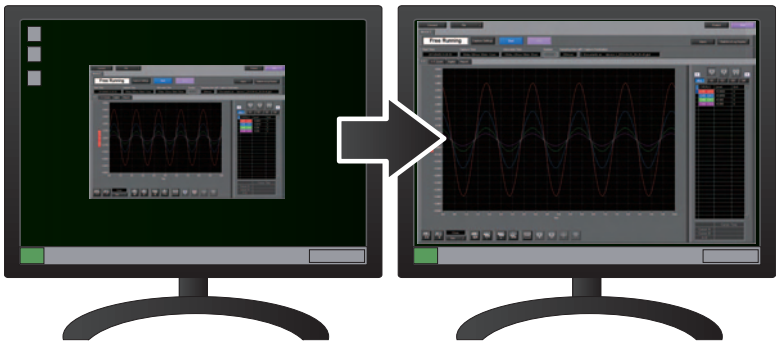


Report View

Displays the report results (daily report) in real time when the report function is enabled.

Simple and Easy to Use

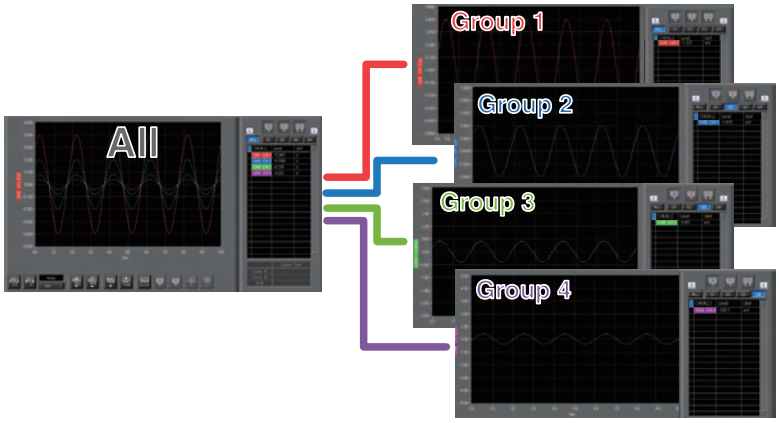
Large icons make it simple and easy to control the waveforms. Time axes, spans, waveform positions can be changed easily. Also, you can maximize a window to fit the screen.



Multichannel Measurement

A maximum of ten device with multiple devices connected. (maximum of 500 channels)

Displayed waveforms can be grouped, and you can select and check a desired waveform among many of them (up to four groups can be set per device).



Export to Direct Excel File Function

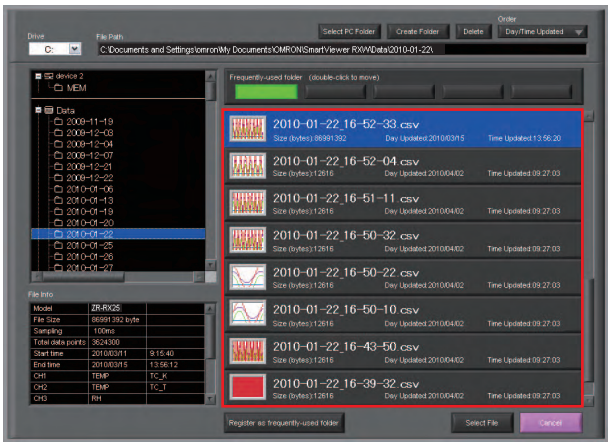
Captured data can be exported directly to an Excel file and displayed as graphs.

Ready-to-use template files are provided as standard for your convenience.

(Note: The Microsoft Excel program must be installed.)

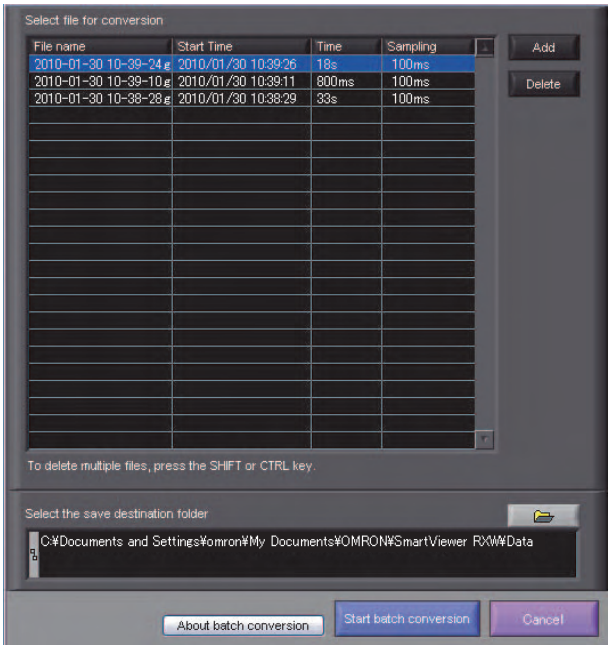
Thumbnail Waveform Display

Before replaying captured data, the waveforms can be checked by referring to the small images (thumbnails) provided next to each file name. These thumbnails provide easy confirmation of the data before opening the file.



CSV File Batch Conversion

Data captured in binary files is converted in a batch to CSV files.

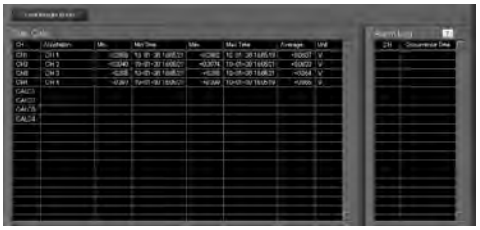


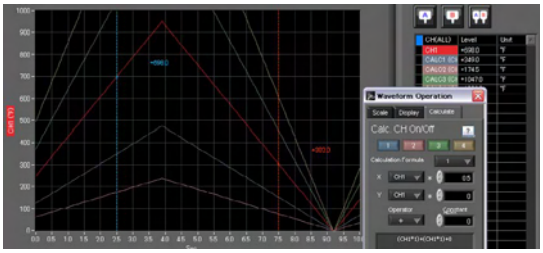
Calculation functions

The available calculation functions are Statistical Calculation and Calculation between Channels.

Statistical Calculation allows you to check the maximum, minimum, and average values of all the channels as numeric values.

Calculation between Channels allows you to set four arithmetic operations between channels up to four at the maximum and check the results as waveforms.





Printing Function, Screen Save Function

The waveform screen can be printed out on a printer, and screen copies saved to a file.

(Note: To use the printing function, the device must be connected to a printer.)

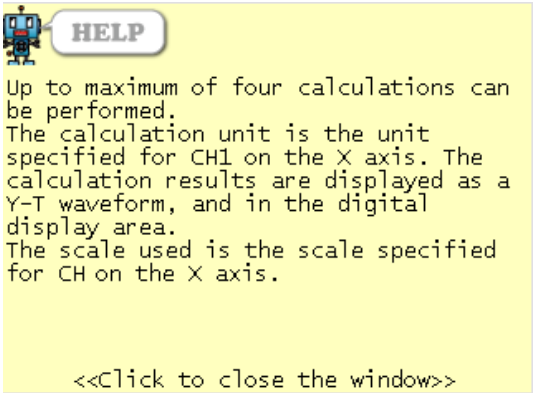
Send Email when Alarm is Generated

When an alarm is generated, this function enables a notification email to be sent to a mobile phone, for example, thereby ensuring that a check can be performed if required.

(* You need an environment in which e-mail can be transmitted. The mail send function is available only during capturing. No mail is sent even if an alarm is generated during the Free Running status.)

Help Function

Help buttons that provide simple descriptions of the various functions are assigned to each of the menu setting items to provide ease of use.



System Requirements

Make sure that the computer on which you plan to install the software meets the following requirements.

Item	System requirements
OS	Windows XP Windows Vista 32Bit/64Bit Windows 7 32Bit/64Bit Note: Supported edition (Ultimate Enterprise Professional HomePremium)
CPU	Pentium 4 : 2.0GHz or higher
Memory	512MB or more (1GB or more is recommended.)
HDD	200 MB additional space is required for installing software. (1GB or more free space is recommended.)
Display	1024 x 768 resolution or higher, 65535 colors or more (16-bit or more)
Other	USB port, TCP-IP port, CD-ROM drive (for installing from CD) Microsoft Excel software (for the Export to Direct Excel File and Display in Excel functions)

Note

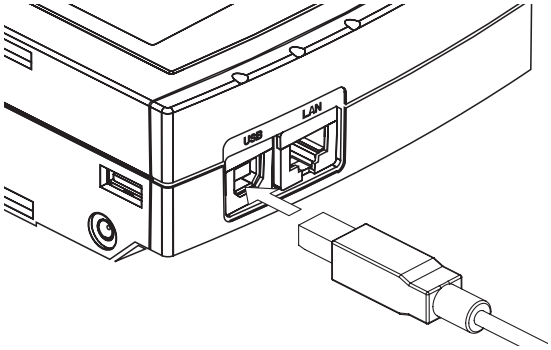
- Even when using a PC that meets the system requirements, measurement data may not be captured correctly depending on the PC status (e.g. running other applications or insufficient memory capacity in the storage media used).
  Exit all other applications before capturing data to the internal hard disk.
- While you are using this software, do not activate any other software. Whenever possible, avoid manipulations or processing of other software than this one (e.g., screen saver, virus check, file copy and transfer, and file search processing, etc.).

Connecting to a PC (Personal Computer)

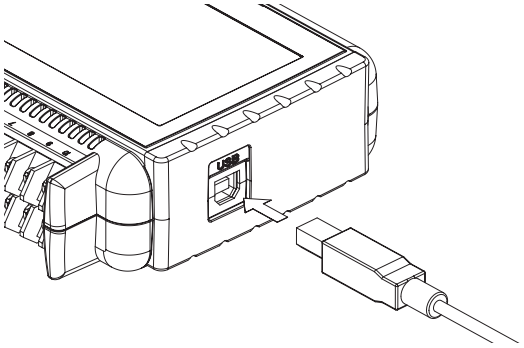
Connecting via USB

The ZR-RX25/ZR-RX45 is connected to a PC via a USB cable.

ZR-RX45



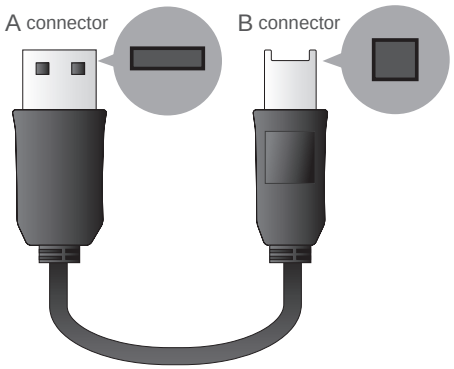
ZR-RX25



Note

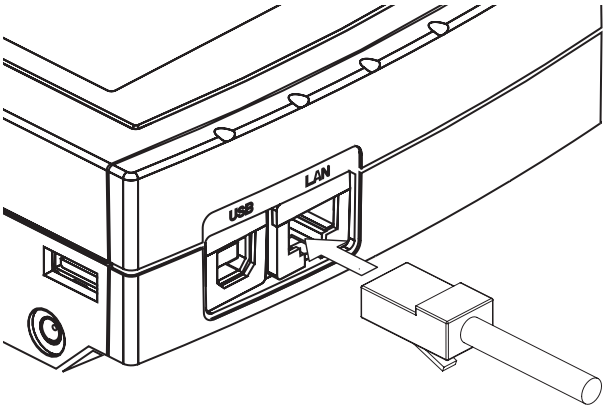
- When using a USB cable, a USB driver must be installed in the PC.
  Refer to the "Installing the USB Driver" (p.17) for the installation procedure.
- LAN connector. Make sure the cable is inserted into the correct connector.

Use an A-B type USB cable to connect the ZR-RX25/ZR-RX45 to a PC.



Connecting via LAN

It can also be connected via a LAN cable. (only for the ZR-RX45 and ZR-RX40)

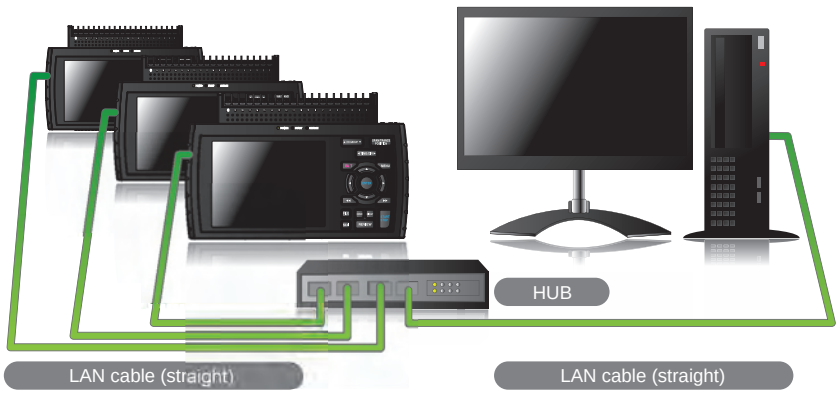


Depending on your usage, use one of the following types of LAN cables.

LAN Cable Types

Use a crossing cable when connecting directly to a PC, without using a hub.

Use a straight cable to connect to a PC through a hub.



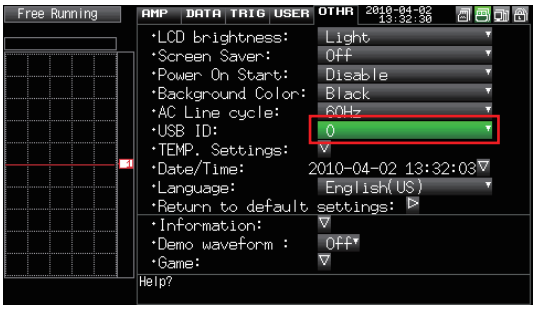
Setting USB ID or IP Address

To connect to a PC, configure the device's interface settings.

USB Settings

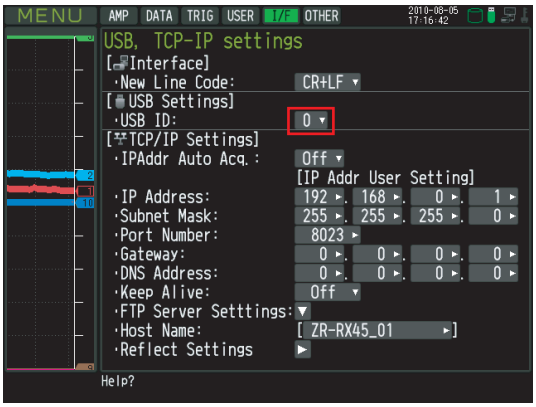
For ZR-RX25: Press the MENU key five times to open "OTHR Settings". Input the "USB ID".

The settings will be in effect when the power of the device is turned off and restarted.



For ZR-RX45: Press the "MENU" key five times to open "I/F Settings". Input the "USB ID".

The settings will be in effect when the power of the device is turned off and restarted.



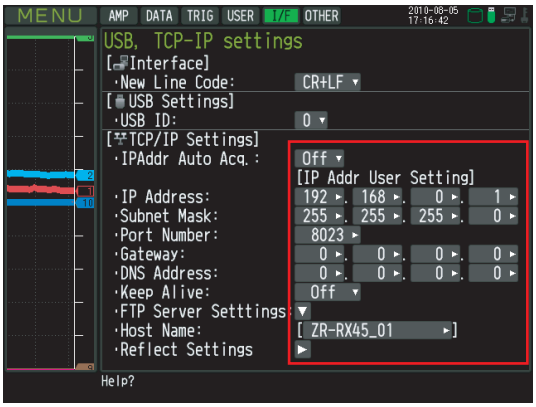
Note

After changing the USB ID setting of this unit, turn off and on the power of this unit.

TCP-IP Settings (ZR-RX45)

Press the [MENU] key five times to open the [I/F] menu.

Set the [IP Address], [Subnet Mask], [Port Number], [DNS Address] and select [Reflect Settings] to accept the changes.



Using Auto IP Address Acquisition

If there is a DHCP server in the same segment of the connected network, Auto IP Address Acquisition is available.

Refer to chapter 3 (5) "Interface Settings" in User's Manual for details.

Example of TCP-IP Settings

Connecting one PC and one ZR-RX45

Refer to the following settings if you are not connecting to a corporate LAN or other networks.

Connect ZR-RX45 to a PC with a crossing cable.

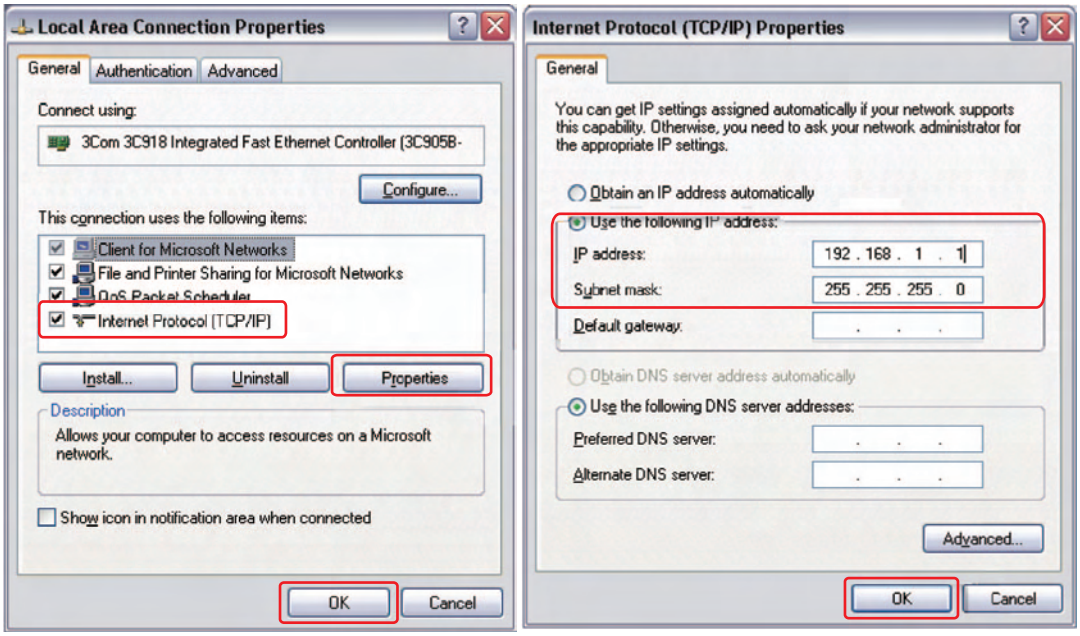
PC's IP Address	192.168.1.1
ZR-RX45's IP Address	192.168.1.2

Note

- In this case, always set the subnet mask to "255.255.255.0".
- In this case, always set the port number to "8023".

Setting PC's IP Address (Windows XP)

Select "Start" button → "Control Panel" → "Network Connections" → "Local Area Connection" → "Properties" → "Internet Protocol (TCP/IP)" → "Properties", click to select "Use the following IP address" check box, set "IP address" and "Subnet mask", and then click "OK".

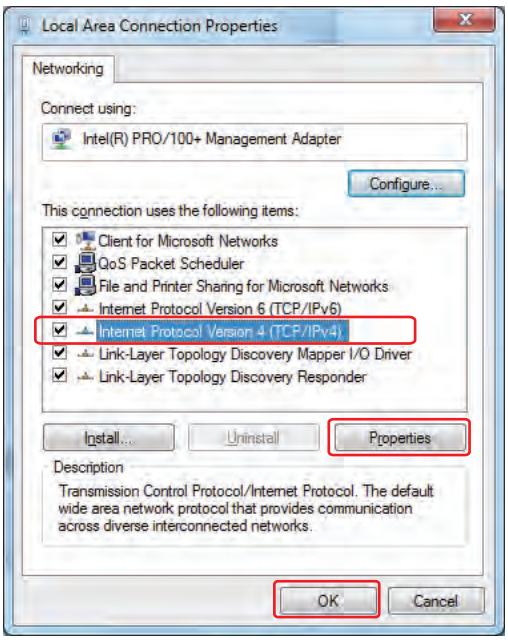


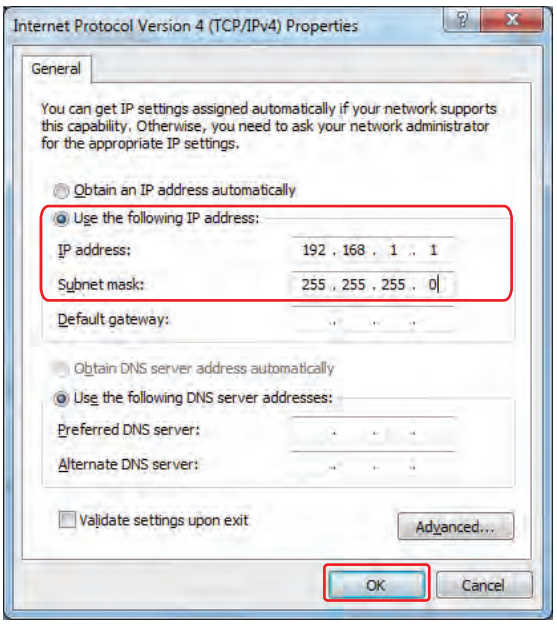
Setting PC's IP Address (Windows Vista)

[Start menu] → [Control Panel] → [Network and Sharing Center] → [Local Area Connection] → [Status Display] → [Properties] → [Select Internet Protocol (TCP/IP)] → [Properties] → Check "Use the following IP Address" → Set [IP Address] and [Subnet Mask] → [OK]

Setting PC's IP Address (Windows 7)

[Start menu] → [Control Panel] → [Network and Sharing Center] → [Local Area Connection] → [Properties] → [Select Internet Protocol (TCP/IP)] → [Properties] → Check "Use the following IP Address" → Set [IP Address] and [Subnet Mask] → [OK]





Installing the USB Driver

To connect ZR-RX25 or ZR-RX45 to a PC with the USB interface, a USB driver must be installed in the PC.

This chapter explains the procedures for installing the USB driver version 2.03 or later.

In the case of Windows XP

Preparation before Installation

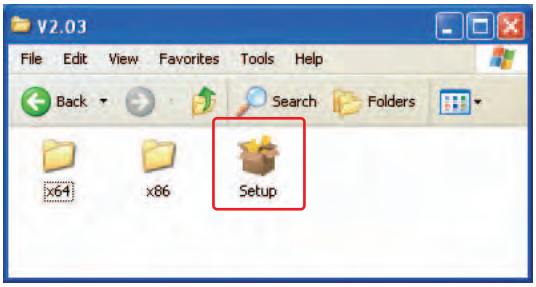
- Confirm ZR-RX25 or ZR-RX45 is not connected to your PC using the USB cable.
  If it is connected to your PC, disconnect the USB cable.
- Close all the other software.

Installation Procedures

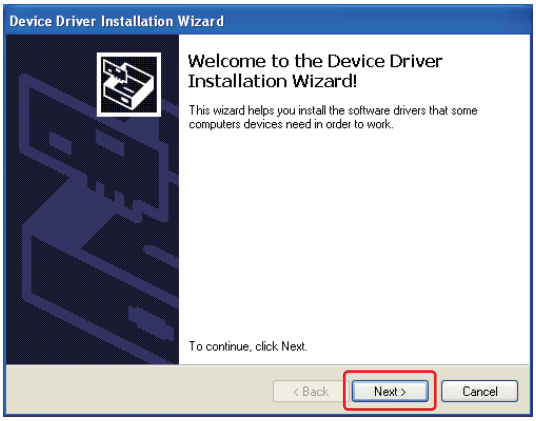
1 **Insert the "Utility disk" (CD-ROM) provided into the PC's CD-ROM drive.**

2 **Click the [USB driver] button on the screen of [Utility Disk Menu]. Or, start D:\USB Driver\RX2xRX4x\Setup.exe.**
(Double click the Setup or Setup.exe.)

Note: D: drive name of CD-ROM. The letter of CD-ROM drive vary it with the CD-ROM drive of your PC.

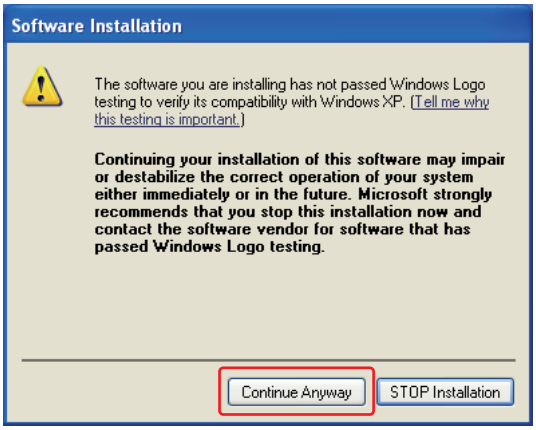


3 **Device Driver Installation Wizard starts.**



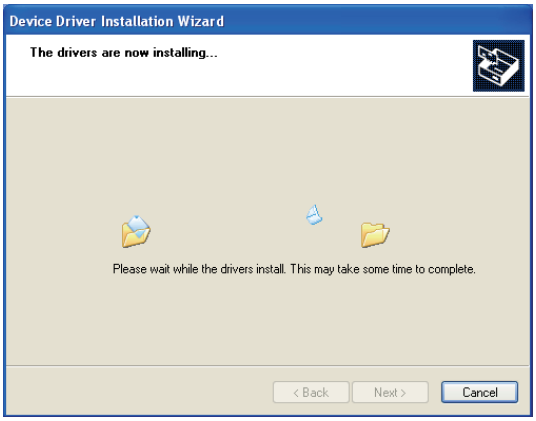
Press the Next button.

4 **The Software Installation dialog box opens in some cases.**

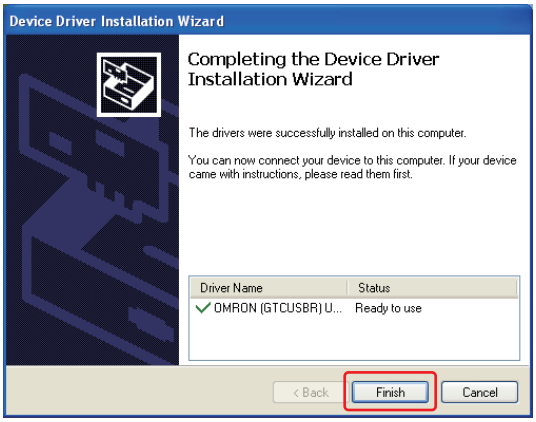


Press Continue Anyway button.

5 **Please wait while wizard installs the driver software.**



6 **The installation completes.**



Press Finish button to exit the Setup.

7 Turn on ZR-RX25 or ZR-RX45 and wait for a while till the initialization of device is completed.

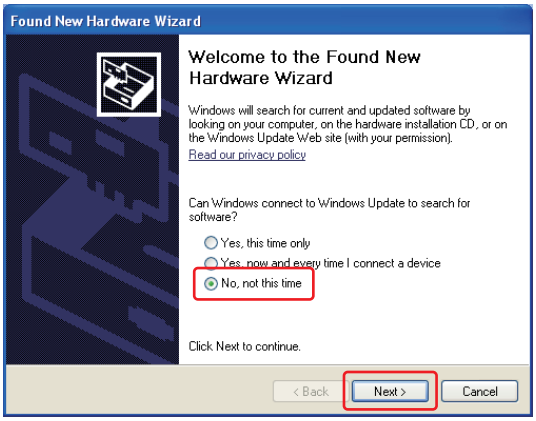
Connect ZR-RX25 or ZR-RX45 to your PC using the USB cable.

The Found New Hardware Wizard in step (8) and subsequent steps starts only at the first connection. (It will never appear again after the next connection of your device to your PC.)

When the USB port to be connected is changed or the USB-HUB is used, the Found New Hardware Wizard reopens in some cases.

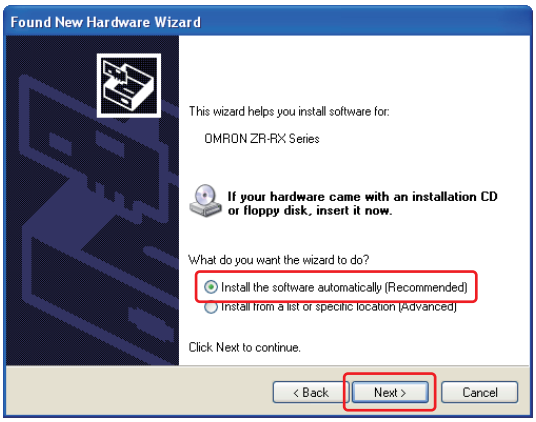
In that case, perform step (8) and subsequent steps.

8 The Found New Hardware Wizard starts.



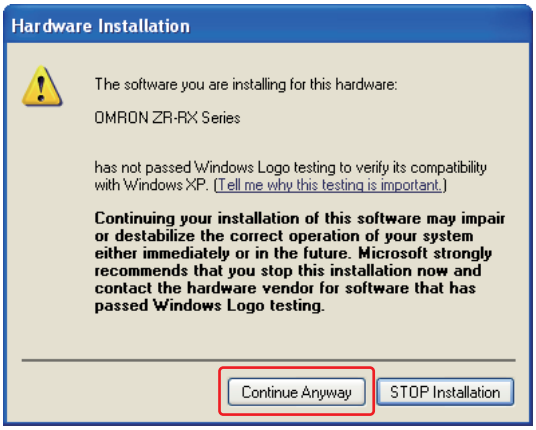
Select "No, not this time" and click the Next button.

9 Specify the installation method.



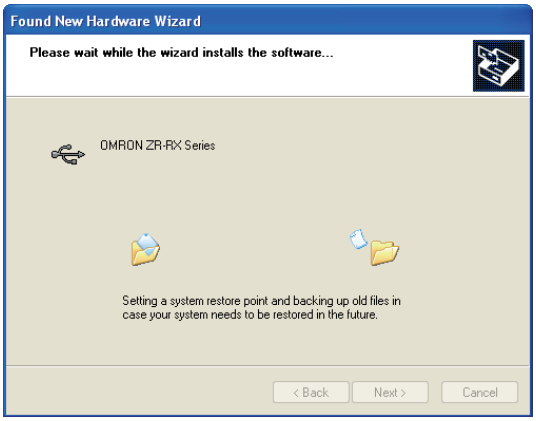
Select "Install the software automatically (Recommended)" and click the Next button.

10 The Hardware Installation dialog box opens in some cases.

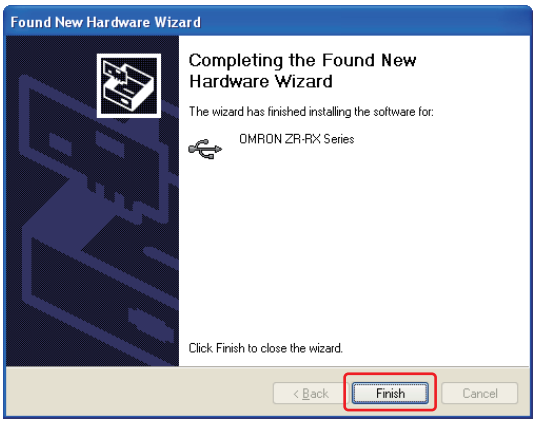


Press Continue Anyway button.

11 Please wait while wizard installs the driver software.



12 The installation completes.



Click the Finish button to exit the Found New Hardware Wizard.

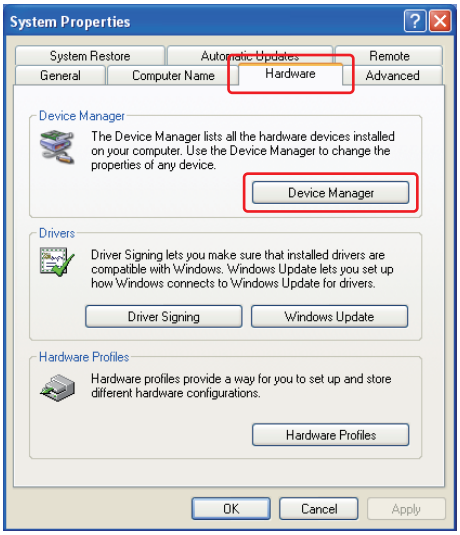
Device Driver Confirmation Procedures

Confirm that the USB driver is correctly installed by the procedures below.

When confirming, turn on ZR-RX25 or ZR-RX45 and connect it to your PC using the USB cable.

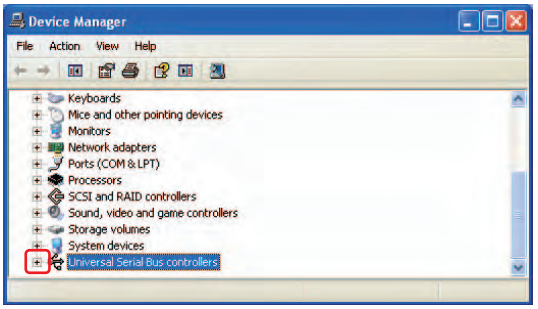
1 Select Device Manager in the System of the Performance and Maintenance on the Control panel.

(Control panel → Performance and Maintenance → System → Device Manager)



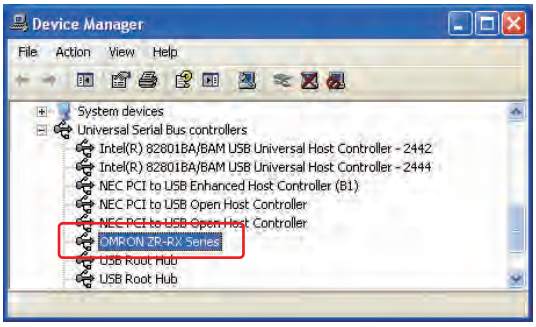
Select the Hardware tab and click the Device Manager button.

2 Device Manager starts.



Click the "+" mark to the left of "Universal Serial Bus controllers" to open the tree.

3 **Confirm the driver is recognized correctly.**



Confirm that the name of OMRON ZR-RX Series is registered and that there is no X or ! mark beside the name

Now the USB driver installation finishes.

In the case of Windows Vista

Preparation before Installation

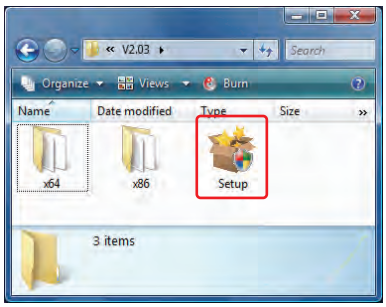
- Confirm ZR-RX25 or ZR-RX45 is not connected to your PC using the USB cable.
  If it is connected to your PC, disconnect the USB cable.
- Close all the other software.

Installation Procedures

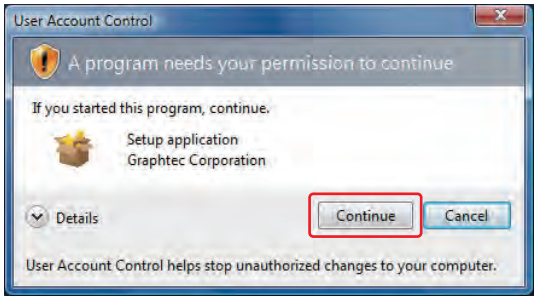
1 **Insert the "Utility disk" (CD-ROM) provided into the PC's CD-ROM drive.**

2 **Click the [USB driver] button on the screen of [Utility Disk Menu]. Or, start D:\USB Driver\RX2xRX4x\Setup.exe.**
(Double click the Setup or Setup.exe.)

Note: D: drive name of CD-ROM. The letter of CD-ROM drive vary it with the CD-ROM drive of your PC.

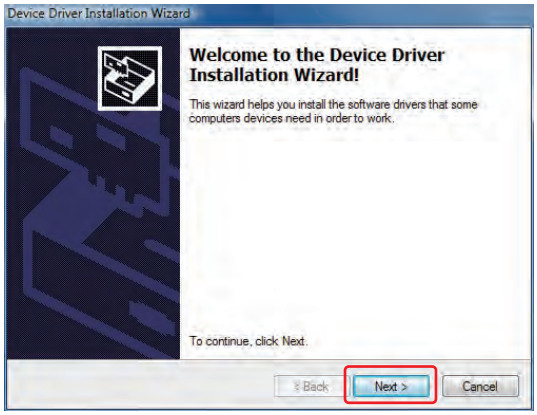


3 **User Account Control dialog may appear.**



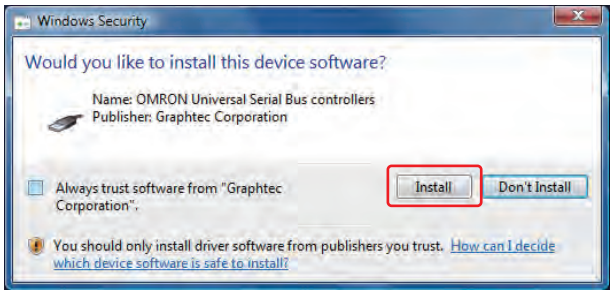
Press Continue button when the User Account Control dialog appears.

4 **Device Driver Installation Wizard starts.**



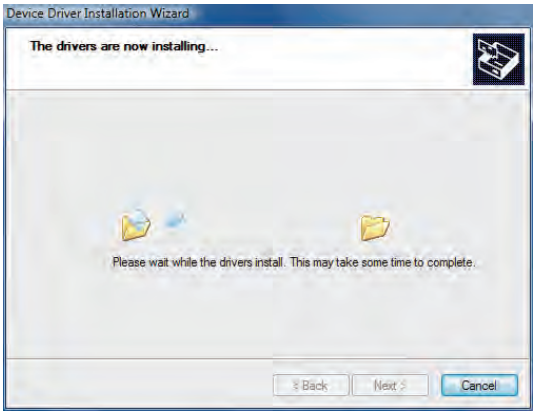
Press the Next button.

5 **Windows Security dialog may opens.**



Press Install button.

6 Please wait while wizard installs the driver software.



7 The installation completes.

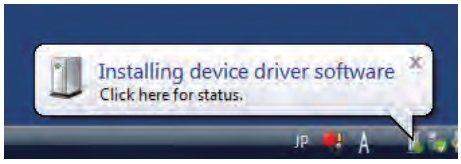
Press Finish button to exit the Setup.

8 Turn on ZR-RX25 or ZR-RX45 and wait for a while till the initialization of device is completed.

Connect ZR-RX25 or ZR-RX45 to your PC using the USB cable.

When you connect it for the first time, the balloon message "Installing device driver software" appears on the right bottom corner on the display, so please wait for a moment.

(It will never appear again after the next connection of your device to your PC.)



After a while, the balloon message shown below appears.

Be sure to wait till the balloon message appears.

If the balloon message does not appear after passing more than 10 min., reconnect your USB cable again.

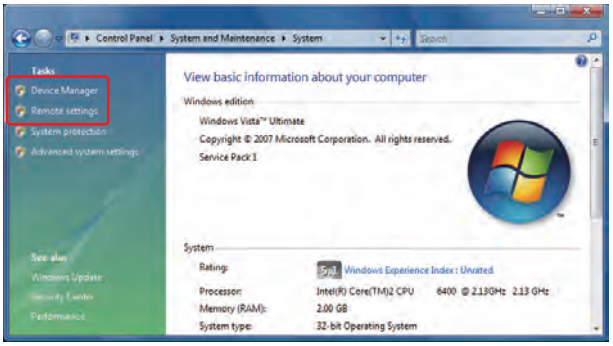
Device Driver Confirmation Procedures

Confirm that the USB driver is correctly installed by the procedures below.

When confirming, turn on ZR-RX25 or ZR-RX45 and connect it to your PC using the USB cable.

1 **Select Device Manager in the System of the System and Security on the Control panel.**

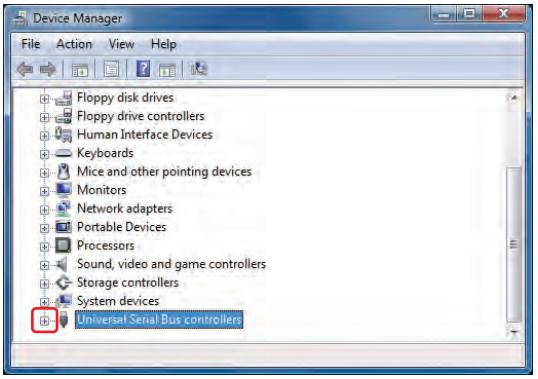
(Control panel → System and Security → System → Device Manager)



2 **User Account Control dialog may apperas.**

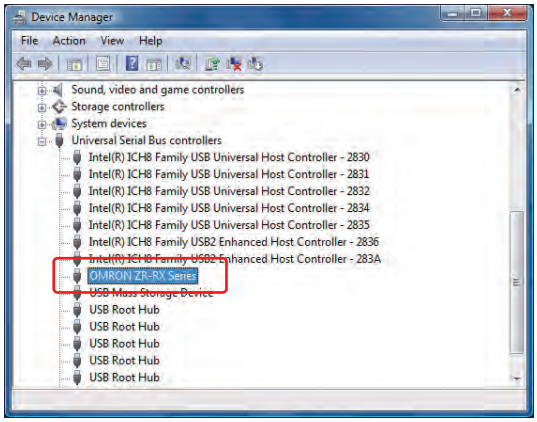
When the User Account Control dialog is displayed, press Continue button.

3 **Device Manager starts.**



Click the white "+" mark next to the Universal Serial Bus controllers and open the tree structure.

4 **Confirm the driver is recognized correctly.**



Confirm that the name of OMRON ZR-RX Series is registered and that there is no X or ! mark beside the name

Now the USB driver installation finishes.

In the case of Windows 7

Preparation before Installation

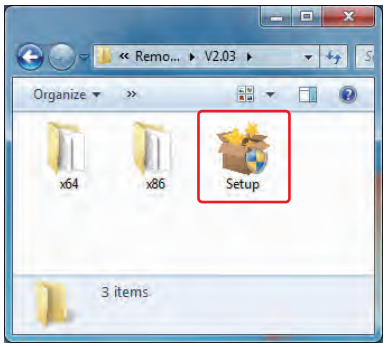
- Confirm ZR-RX25 or ZR-RX45 is not connected to your PC using the USB cable.
  If it is connected to your PC, disconnect the USB cable.
- Close all the other software.

Installation Procedures

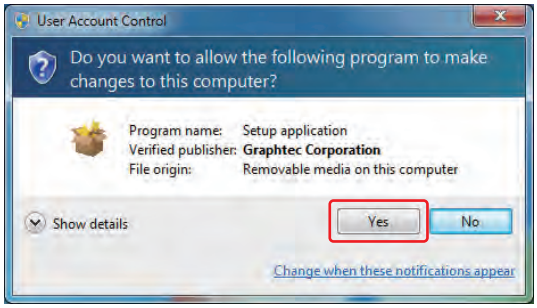
1 **Insert the "Utility disk" (CD-ROM) provided into the PC's CD-ROM drive.**

2 **Click the [USB driver] button on the screen of [Utility Disk Menu]. Or, start D:\USB Driver\RX2xRX4x\Setup.exe.**
(Double click the Setup or Setup.exe.)

Note: D: drive name of CD-ROM. The letter of CD-ROM drive vary it with the CD-ROM drive of your PC.

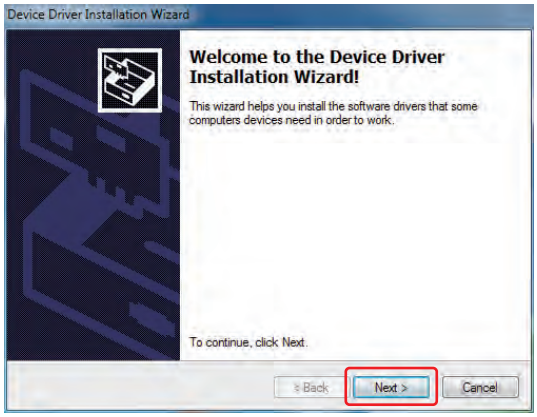


3 User Account Control dialog may appear.



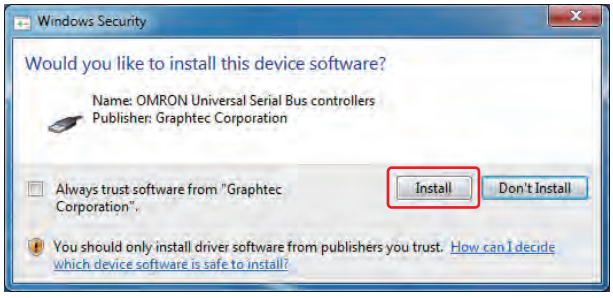
Press Yes button when the User Account Control dialog appears.

4 Device Driver Installation Wizard starts.



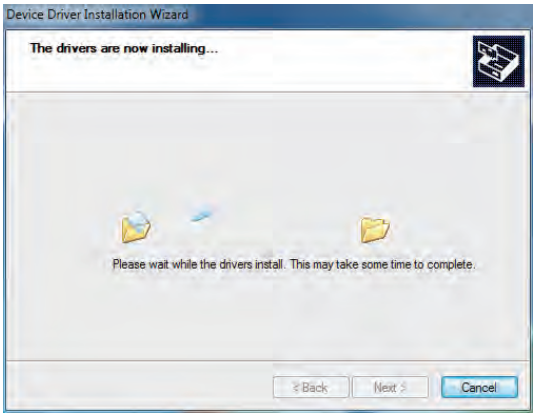
Press the Next button.

5 Windows Security dialog may opens.



Press Install button.

6 Please wait while wizard installs the driver software.



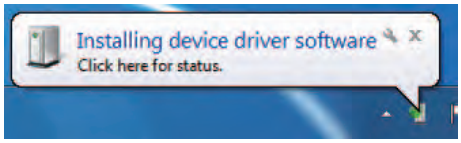
7 The installation completes.

Press Finish button to exit the Setup.

8 Turn on ZR-RX25 or ZR-RX45 and wait for a while till the initialization of device is completed.

Connect ZR-RX25 or ZR-RX45 to your PC using the USB cable.

When you connect it for the first time, the balloon message "Installing device driver software" appears on the right bottom corner on the display, so please wait for a moment. (It will never appear again after the next connection of your device to your PC.)



After a while, the balloon message shown below appears.

Be sure to wait till the balloon message appears.

If the balloon message does not appear after passing more than 10 min., reconnect your USB cable again.

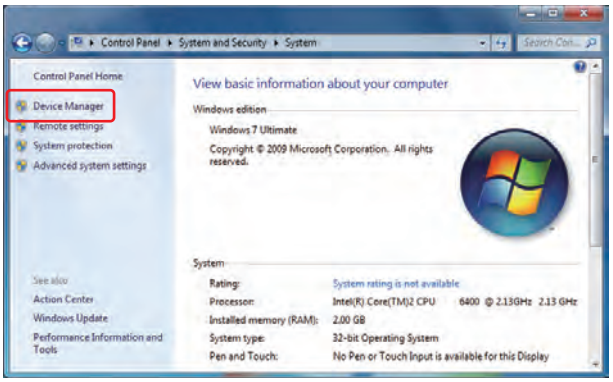
Device Driver Confirmation Procedures

Confirm that the USB driver is correctly installed by the procedures below.

When confirming, turn on ZR-RX25 or ZR-RX45 connect it to your PC using the USB cable.

1 **Select Device Manager in the System of the System and Security on the Control panel.**

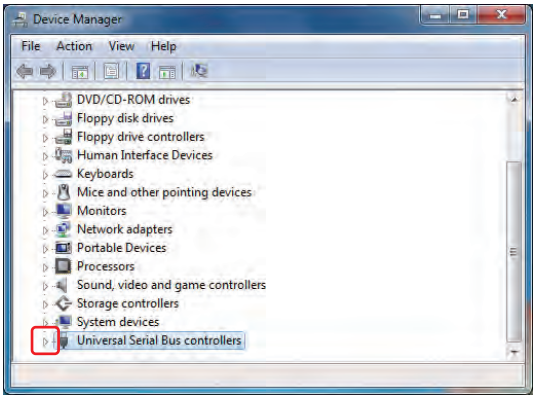
(Control panel → System and Security → System → Device Manager)



2 **User Account Control dialog may apperas.**

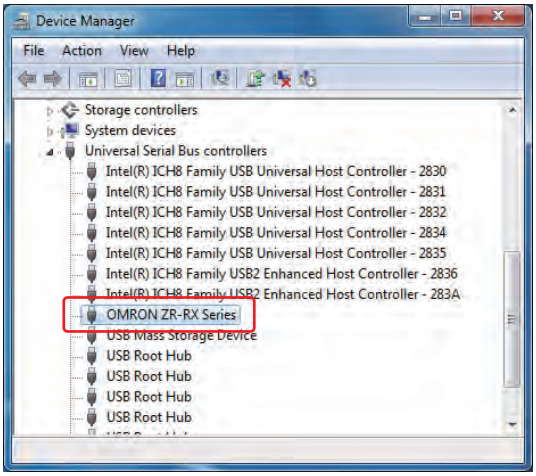
When the User Account Control dialog is displayed, press Continue button.

3 **Device Manager starts.**



Click the white triangle next to the Universal Serial Bus controllers and open the tree structure.

4 Confirm the driver is recognized correctly.



Confirm that the name of OMRON ZR-RX Series is registered and that there is no X or ! mark beside the name

Now the USB driver installation finishes.

Installing the Application Software

This chapter describes how to install the application software.

1 **Insert the "Utility disk" (CD-ROM) provided into the PC's CD-ROM drive.**

The screen of [Utility Disk Menu] will be displayed.

2 **Click the [Smart Viewer RXW (English version)] button.**

The installer starts.

3 **Follow the instructions on the screen to continue with the installation.**

Note

Be sure to observe the following points when connecting the ZR-RX25/ZR-RX45 to a PC.

- Do not connect any devices apart from a mouse or a keyboard to any of the other USB terminals on your PC.
- Set the PC's power-saving functions to Off.
- Set the Screen Saver to Off.
- Set the anti-virus software auto update and scan scheduler functions to Off. Also, set the Windows auto update and scheduler functions to Off.
- When using the note PC, if you close the display, the PC may be in stand-by mode. Please do not close the display during using the software.

Trademarkes

- Windows, Windows Vista and Windows 7 are registered trademarks of Microsoft Corporation in the US and other countries.
- The company names, logos and product names mentioned herein are the trademarks or registered trademarks of their respective companies.

Basic Operating Procedure

The basic operating procedure of this software consists of the following four operations:

Operation	Description
Controlling the ZR-RX25/ZR-RX45/ZR-RX20/ZR-RX40 Device	With the ZR-RX25/ZR-RX45/ZR-RX20/ZR-RX40 connected to a PC, you can load the setting information of this unit to this software and make settings and control operations of this unit. The setting conditions can be saved as a configuration file in a PC. This file can be read to reflect the setting conditions.
Checking Input Data	With the ZR-RX25/ZR-RX45/ZR-RX20/ZR-RX40 connected to a PC, you can display signals entered to this unit in a graph on this software and check them in real time.
Data Capture	When the ZR-RX25/ZR-RX45/ZR-RX20/ZR-RX40 is connected to a PC, data can be exported to a PC and saved. Data can be also saved in the ZR-RX25/ZR-RX45/ZR-RX20/ZR-RX40. Either of the saved data can be used as a backup.
Replaying Captured Data	Data files captured and saved in a PC can be replayed. When the ZR-RX25/ZR-RX45/ZR-RX20/ZR-RX40 is connected to a PC, data saved in the ZR-RX25/ZR-RX45/ZR-RX20/ZR-RX40 can be also replayed. You can clip the desired parts from the replayed data or convert it to a different file format and save it.

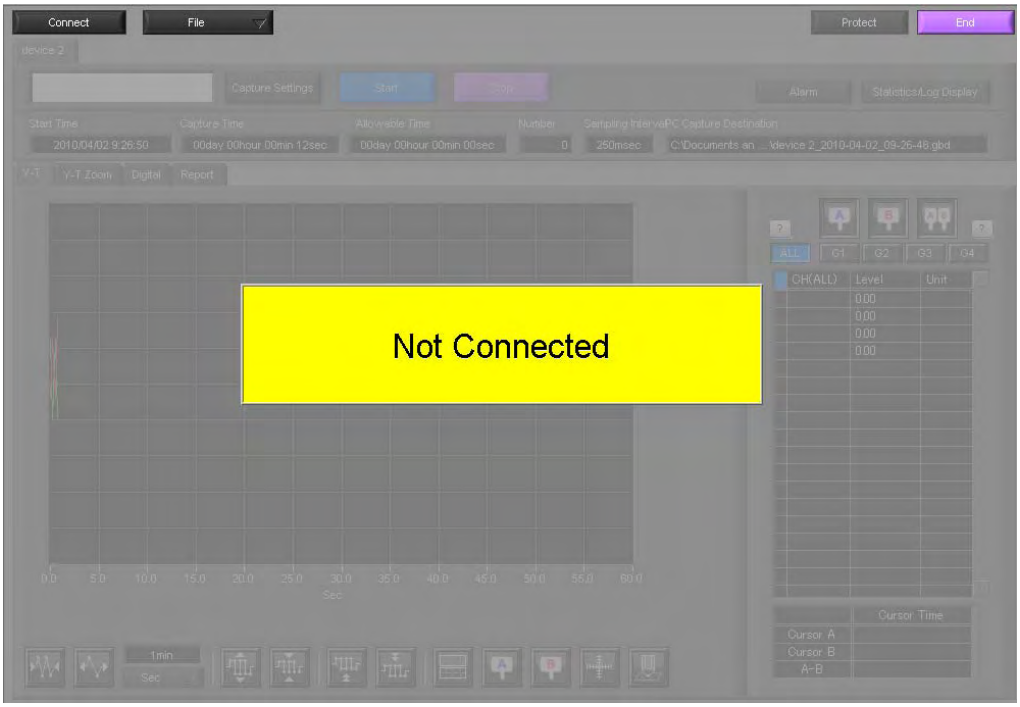
Controlling Device

This software can perform the following operations:

- Start/Stop Data Capture
- AMP Settings (Input, Range, Filter, etc.)
- Data Capture Settings (Sampling Interval, Device Data Capture Destination, External Sampling, etc.)
- Trigger, Alarm Settings (Trigger Settings, Alarm Settings, etc.)
- Other Settings (Temperature Unit, Factory Default Settings, etc.)

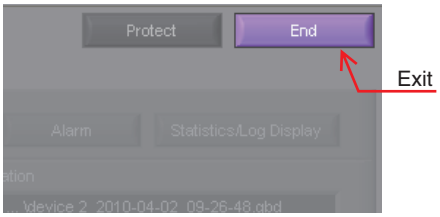
Launching the Software

Click the Taskbar's "Start" button → "Programs" → "OMRON" → "Smart Viewer RXW" → "Smart Viewer RXW" to launch the application software. Once the program has started up, the following screen is displayed.

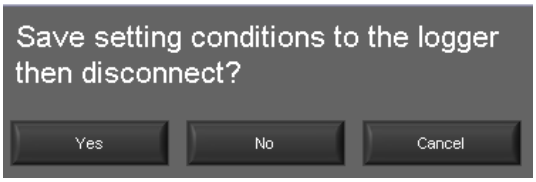


Exiting the Software

To exit the software, click the "End" button in the upper right corner of the main screen.



When you try to exit the software in the connected status, a message appears to confirm if the setting conditions are saved to the device.



Operation	Description
Yes	Click this button to save the setting conditions on this software in the device and exit. Next time connecting to the device, the last setting conditions are reflected.
No	Click this button to exit without saving the setting conditions on this software in the device. After the power is turned on, the setting conditions on device returns to the state before connecting to the software.
Cancel	This software is not disconnected and it remains active.

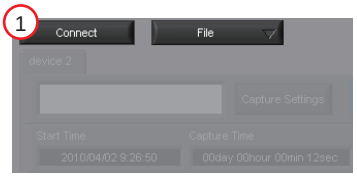
Note

The following settings are not saved to this unit.

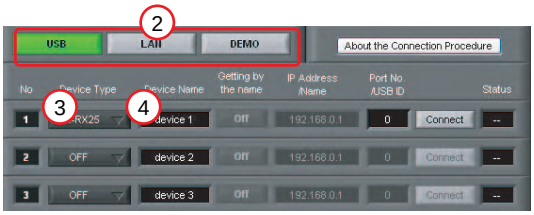
- Setting items not available on the ZR-RX25/ZR-RX45
- Line color settings
- Trigger time, duration, and repeated capture settings

PC Connection Settings

Configure the communication settings between ZR-RX25/ZR-RX45 and a PC.



1 **Click the "Connect" in the Main screen, and the Connection screen will be displayed.**



2 **Select an interface to be used for connection (USB connection, LAN connection, or Demo connection).**

3 **From "OFF" in the unit registration, select a device type to be connected.**

4 **At "Device Name" enter a desired name. (\ / : * ? " < > | characters can not use the name of the device.)**

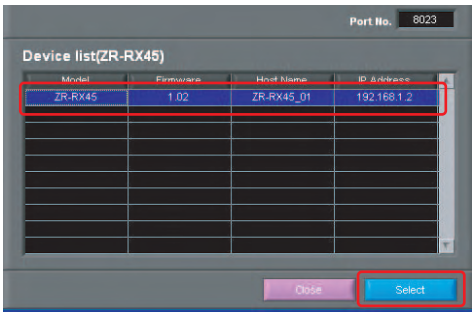
5 **At "Connecting to a PC" enter the settings that have been made on this unit.**

Use the same settings as in "Setting USB ID or IP Address" (p.13).

- For USB connection: Enter a "USB ID."

- For TCP/IP connection: Enter an "IP address" and a "Port No.".

- To use Retrieve by Name on TCP/IP (ZR-RX45 only)
  Click the Retrieve by Name button to display a list of devices. When the LAN-connected ZR-RX45 is automatically detected, select a model to be connected and click the "Select" button.



6 **Click the "Connect" button to perform the connection to enable communication between the devices.**

7 **Click the "Close" button to close the Connect screen.**

* Demo Connection

Demo Connection does not actually connect to the ZR-RX25/ZR-RX45 but makes a pseudo-connection. This connection is available only if the registered device is the ZR-RX25 or ZR-RX45.

A supplied demo waveform will be displayed.

Note

- A mixture of USB and LAN connections cannot be used.
- Before making a connection, check that this unit is either in a "Free Running" or "Capturing" status.
- When they are connected, the software works with the setting conditions read from the ZR-RX25/ZR-RX45. When you want to use the PC's settings, press the "Read Setting Conditions" button to read the saved configuration file. To do this, you should save the setting conditions.
  The following settings are not saved to this unit.
- Setting items not available on the ZR-RX25/ZR-RX45
- Line color settings
- Trigger time, duration, and repeated capture settings
- After a connection is established, the time on the PC is transferred to this unit. Note that the time of this unit will be changed.

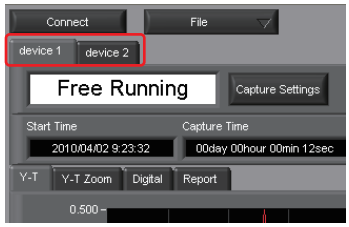
Connecting multiple devices

Smart Viewer RXW can connect up to 10 devices (maximum 500 channels).

Make settings for each of the devices to be connected.

* Refer to the previous page for details on the settings.

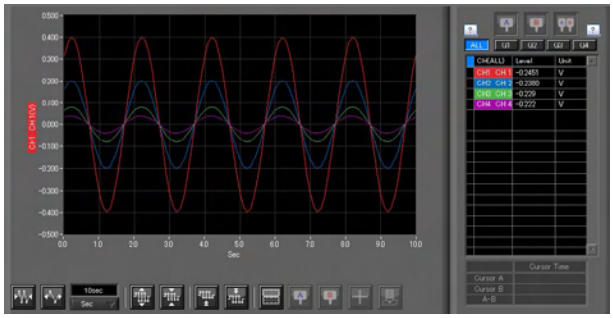
The connected tabs are displayed. Select each device to make desired settings.



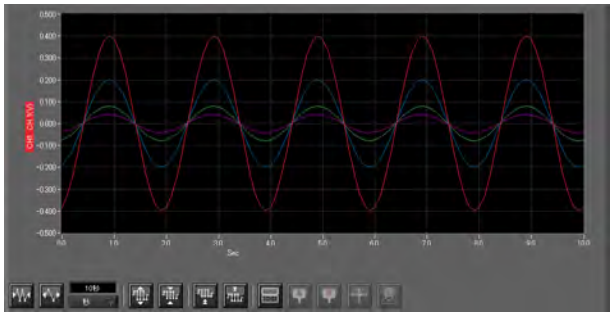
Display Screens

This section explains the display screens in Free Running or Capturing status in this software.

Y-T

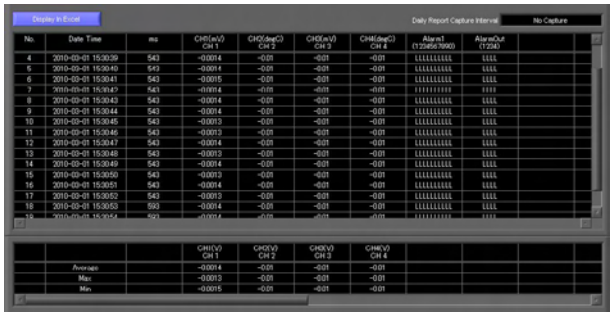


Y-T Zoom

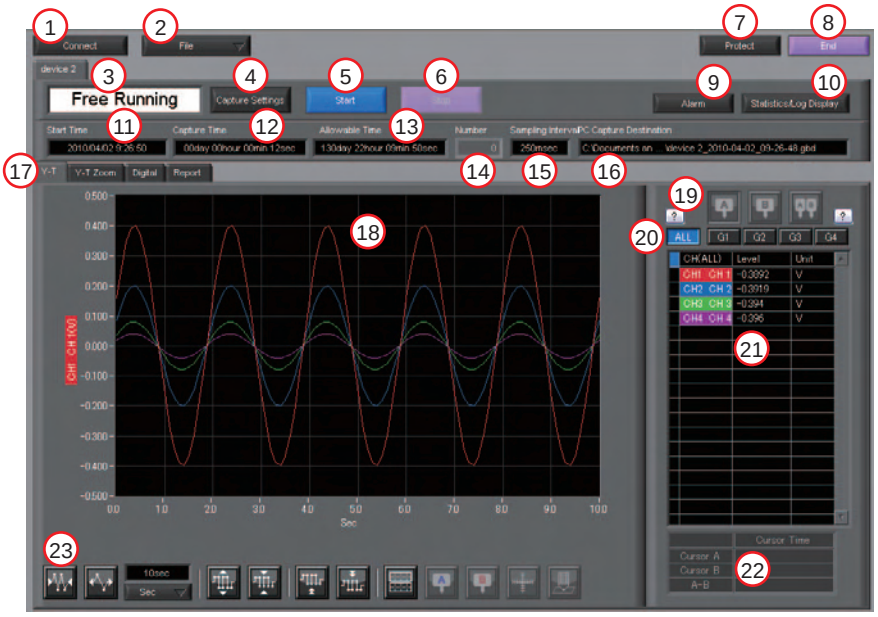


Digital

Report



Y-T (Main Screen)

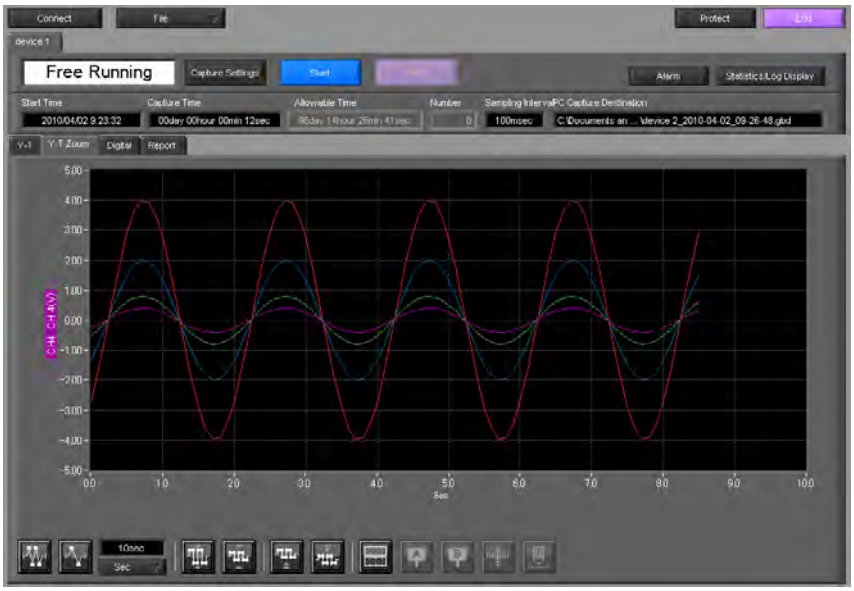


No.	Name	Description
1	Connect	Opens a screen for connecting to this unit.
2	File	Conducts file-related operations. • Open Data..... Displays the data in files stored on the PC or files stored on this unit as waveforms. • CSV file batch conversion..... Click this button to convert multiple GBD (binary data) files captured to the PC to CSV files. • Print Screen ..... Click this button to print out a copy of the screen. Printing is performed at the printer that has been selected as the default printer. If you change the printer, relaunch the software. • Save Screen ..... Click this button to save the displayed screen as a BMP file. • CSV Config ..... Set decimal point and delimiter according to the OS using.
3	Simplified message area	The operating status is displayed here. • Free Running ..... Stopped status (not capturing data) • Armed ..... Awaiting trigger activation; data has not been captured. • Recording..... Data capture status
4	Capture Settings	Click this button to open the data capture settings screen. Refer to "Settings Screens" (p.44) for details.
5	Start	Click this button to start data capture.
6	Stop	Click this button to stop data capture.
7	Protect	Click this button to set the password to protect the software. * Protection operations occur only in this software. Be careful that this software can be exited via Windows operations.
8	End	Click this button to exit the application.
9	Alarm	Click this button to display the alarm output port status. If "Alarm Hold" has been selected, the alarm can be cleared by clicking the "Alarm Clear" button.

No.	Name	Description
10	Statistics/Log Display	Click this button to display the results of statistical calculation performed during data capture, and a log of the alarms generated.
11	Start Time	Data capture start time.
12	Capture Time	The amount of time that has elapsed since the start of data capture.
13	Allowable Time	The amount of time available for data capture. When the remaining time is up, data capture stops at both the device and the PC.
14	Number	The number of data capture operations when Repeat Capture has been specified.
15	Sampling Interval	The sampling interval. * EXT is displayed during external sampling.
16	PC Capture Destination	The data capture destination at the PC.
17	Screen switching	Switches between screens (Y-T/Y-T Zoom/Digital/Report Views).
18	Waveform Graph	The waveforms are displayed here.
19	Cursors	Selects which of the cursor values should be displayed in the digital display area when scroll is stopped during capture. Up to three values (Cursor A, Cursor B, Cursor A-B) can be displayed at the same time. This function is available when the scroll is Off during capture, or during replay.
20	Switch displayed groups	Click one of these buttons to select a group whose waveform and digital values are displayed.
21	Digital	The digital values are displayed in this area. Clicking on any of the CH numbers enables the waveform for that channel to be hidden/displayed. The channels for which an alarm has been generated are shown in red. The waveform display On/Off setting is cleared when the capture settings are changed and is reset to On.
22	Cursor Time	The cursor times are displayed during data capture when Scroll Off has been selected.
23	Waveform Op.	Click this button to perform various settings for the waveform display. Refer to "About Icons" (p.70) for details.

Y-T Zoom

Switches to full-screen Y-T View. The operation is the same as in Y-T View.



Digital

The captured data is displayed as digital values. Instantaneous values are displayed in large characters to enable easy confirmation.

No.	Name	Description
1	Analog	20 analog channels' digital values are displayed here.
2	Set displayed CH	Click one of these buttons to select 20 analog channels to display the digital values. It is not displayed for ZR-RX25 or ZR-RX20.
3	Pulse	Pulse signals' digital values are displayed here. (when the Logic/Pulse setting is "Pulse")
4	Logic	Logic signals' digital values are displayed here. (when the Logic/Pulse setting is "Logic")

Report

Displays daily report data during capture when the daily report function is enabled. The displayed data can be displayed on EXCEL in the Free Running status.

If Off has been specified for the Report setting, report data is not displayed.

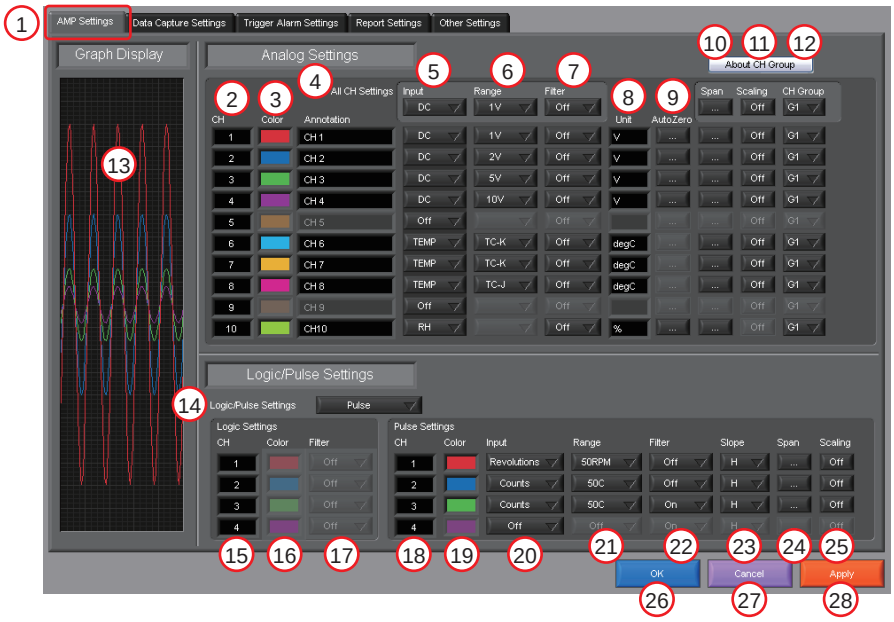
No.	Name	Description
1	Display in Excel	The data is displayed in Excel format when the device is in the Free Running status.The Microsoft Excel program must be installed in order for the Export to Direct Excel File function to be used. * Data displayed on EXCEL is only data displayed in the report.
2	Daily Report Capture Interval	The daily report capture interval is displayed here.
3	Daily report data	The daily report data is displayed here. If the number of points exceeds 100, data is deleted starting from the oldest data (the actual data is not affected).
4	Calc. resultsThe	The calculated results for the average, maximum and minimum values are displayed here.

Settings Screens

This chapter describes the screens used to perform settings related to data capture.

AMP Settings

This screen is used to make the analog input, logic input, and pulse input settings.



No.	Name	Description
1	Settings tabs	These tabs are used to change the settings screen. • AMP Settings ..... This tab is used to make input-related settings. • Data Capture Settings .... This tab used to make settings related to data capture. • Trigger/Alarm Settings .... This tab is used to make settings related to the trigger and alarm functions. • Report Settings ..... This tab is used to make settings related to the daily report, monthly report, and Export to Direct Excel File functions • Other Settings..... This tab is used to make various other settings, to display information, and so forth.
2	CH	These are the channel numbers for analog input.
3	Color	The color used for the waveform for each channel can be specified here. * The line color settings are not stored in captured data. Since the setting values of this software are used, the line colors may be different during capture and replay.
4	Annotation	Each channel can be freely annotated (input the signal name, etc.). The maximum number of characters is 31 (in single-byte).
5	Input	Select the input type for each channel. • Off ..... No input is made to that channel. • DC..... Select DC to perform voltage measurement. • TEMP..... Select TEMP to perform temperature measurement. • RH..... Select RH to perform humidity measurement.

No.	Name	Description
6	Range	These buttons are used to select the input range for each channel. • DC..... 20/50/100/200/500(mV)/1/2/5/10/20/50(V)/1-5V • TEMP ..... TC-K/TC-J/TC-T/TC-R/TC-E/TC-B/TC-S/TC-N/TC-W Pt100*/JPt100*/PT1000* (* is only ZR-RX45 or ZR-RX40) • RH..... Fixed to 1 V; the unit is converted internally. 0V → 0%, 1V → 100%
7	Filter	Use these buttons to set the filter for each channel. Moving average processing is used in the filter. It captures the data for configured number of times at the configured sampling rate and performs average processing. (Off/2/5/10/20/40)
8	Unit	The selected unit is displayed here.
9	Auto Zero	Adjusts the current input value as the zero points for each channel (voltage and humidity only). Refer to "Auto Zero Setting" (p.46) for details.
10	Span	Use these buttons to set the upper limit and lower limit values for the waveforms displayed in the waveform graph. Refer to "Span Settings" (p.47) for details
11	Scaling	Use these buttons to convert the unit. Refer to "Scaling Settings" (p.47) for details
12	CH Group	Use these buttons to set the display group for each channel. Only the groups set here can be viewed in Y-T display screen.
13	Graph Display	The waveforms for which settings have been made can be checked here. Click the "Apply" button to apply the settings that have been made.
14	Logic/Pulse switching	Use this button to switch the digital input. Logic, Pulse, or OFF can be set here. This setting is not available for ZR-RX20. (Off/Pulse/Logic)
15	Logic CH number	The channel numbers for logic input.
16	Logic Line Color	Make the logic waveform color setting here.
17	Logic Filter	Make the logic filter setting here. The filter is about -3dB at about 30Hz. (Off/On)
18	Pulse CH number	The channel numbers for pulse input.
19	Pulse Line Color	Make the pulse line color setting here.
20	Pulse Input	Use the Input button to select the pulse input type. * The upper limit of the count in one sample is 50k. • Revolutions ..... The number of pulses generated in one second is counted, multiplied by 60, and displayed as the number of revolutions (RPM). • Counts ..... A cumulative count is made of the number of pulses generated in one sample. • Inst. ..... The number of pulses generated in one sample is counted.
21	Pulse Range	Use these buttons to set the pulse range. • Revolutions ..... 50/500/5000/50k/500k/5M/50M/500M (RPM/F.S.) • Counts ..... 50/500/5000/50k/500k/5M/50M/500M (C/F.S.) • Inst. ..... 50/500/5000/50k/500k/5M/50M/500M (C/F.S.)
22	Pulse Filter	Make the pulse filter setting here. The filter is about -3dB at about 30Hz. (Off/On)
23	Pulse Slope	Use this button to select the pulse detection slope. • H ..... Rising signals are counted. • L..... Falling signals are counted.
24	Pulse Span	Use this button to set the upper limit and lower limit values for the waveforms displayed in the waveform graph.
25	Pulse Scaling	Use this button to convert the unit.

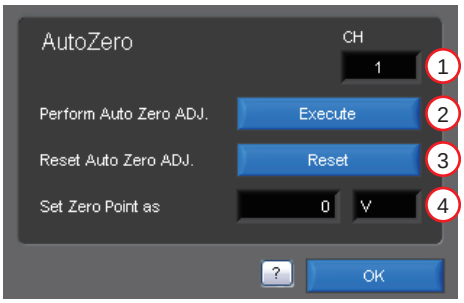
No.	Name	Description
26	OK	Click this button to register your settings and close the screen.
27	Cancel	Click this button to close the screen without registering your settings.
28	Apply	Click this button to apply the settings mode.

Auto Zero Setting

Performs zero adjustment.

The adjustable range is ±10% of the setting range.

(Example: For a range of 1V, the full scale is ±1 V, and the adjustable range is ±100 mV.)

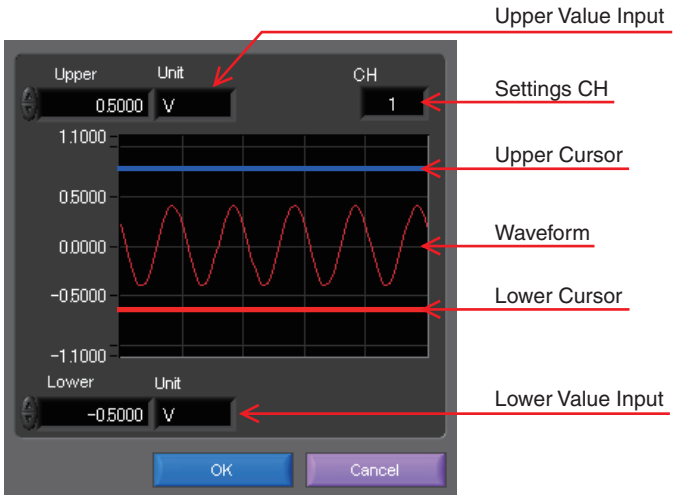


No.	Name	Description
1	CH	Displays a channel for which Auto Zero ADJ. should be performed.
2	Perform Auto Zero ADJ.	Performs Auto Zero ADJ. * If you have changed the input or range just before this step, first click "Apply" in the capture setting screen.
3	Reset Auto Zero ADJ.	Resets the zero adjustment to the initial state. * Changing the range will reset this setting.
4	Zero position voltage value	Displays the adjusted value after Zero ADJ.

Span Settings

Span settings are made at this screen.

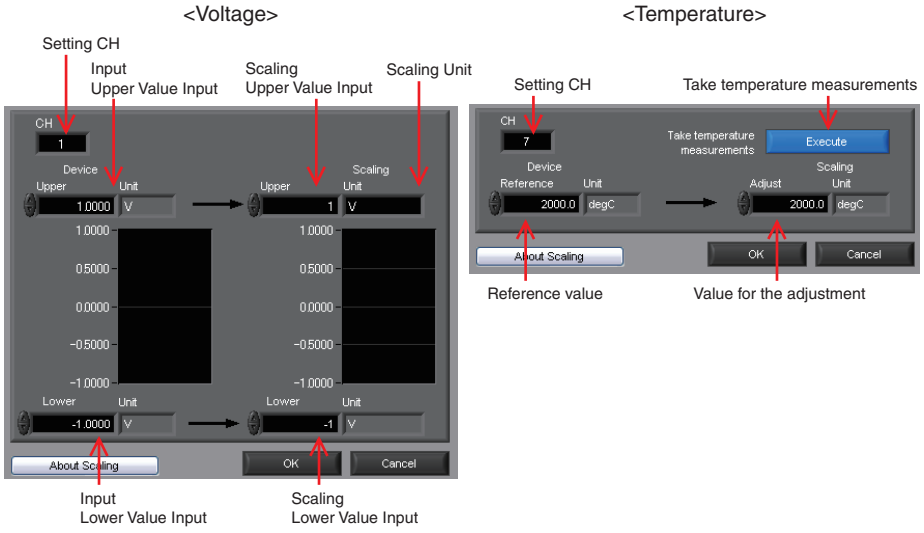
To make the settings, input numerical values directly or use a cursor to adjust values.



Scaling Settings

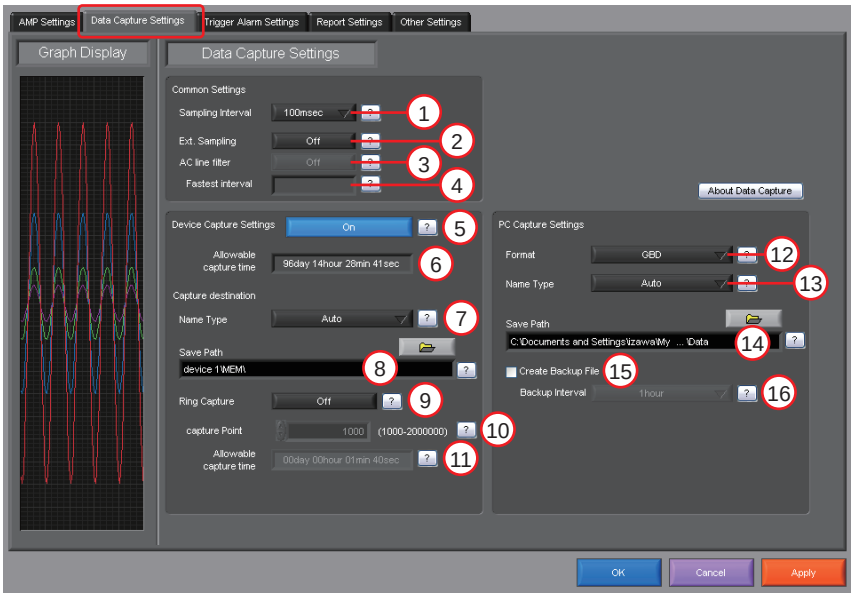
Sets the scaling (unit conversion). Enter the upper and lower limits of the input and converted values. For the temperature channel, the offset setting with two points is used.

* If you have changed the input from the temperature or voltage just before retrieving the temperature measurement values, first click "Apply" in the capture setting screen.



Data Capture Settings

Settings such as the Sampling Interval, Device Capture Settings and PC Capture Settings are made at this screen.

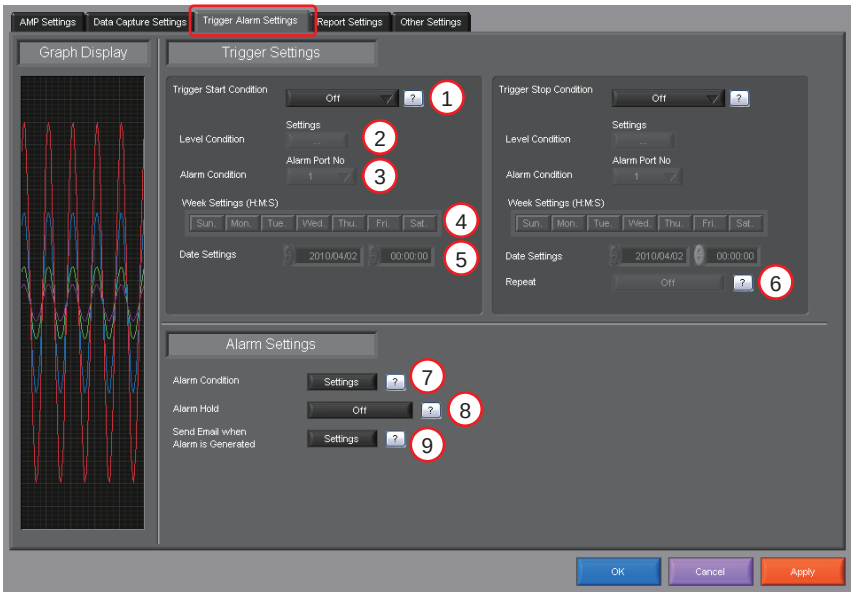


No.	Name	Description
1	Sampling Interval	Specifies the sampling interval for data capture. The sampling interval that can be specified depends on the number of measured channels. 10/20/50/100/125/200/250/500(ms)/1/2/5/10/20/30(s)/1/2/5/10/20/30(min)/1(h) * Allowable settings vary with the input setting and the number of measurement channels.
2	External sampling	Sets the external sampling function to On or Off. If set to On, data is captured using signals entered from the external input terminal. Signals that can be entered from the external input terminal must be slower than the "fastest interval" display. Refer to the User's Manual for details. * This function is available only for the ZR-RX25 and ZR-RX45.
3	AC Line Filter	Sets the AC line filter function to On or Off in the external sampling settings. The On or Off setting will change the fastest interval of the external sampling. Refer to the User's Manual for details. * This function is available only for the ZR-RX25 and ZR-RX45.
4	Fastest interval	Displays the fastest interval of external sampling when the external sampling function is used. The fastest interval varies with the AC line filter setting and the number of measurement channels. Refer to the User's Manual for details. * This function is available only for the ZR-RX25 and ZR-RX45.
5	Device Capture Destination Settings button	Use this button to specify the On/Off of data capture of the device. • On ..... Data capture operation is also performed on the device.Data capture cannot be started when there is no space in the data capture destination of the device.Data is captured to both the device and the PC. • Off ..... Data capture operation is not performed on the device. Data capture can be started when there is no space in the data capture destination of the device.Data is captured only to the PC. * A setting of capturing data in CSV format to this unit is not available.

No.	Name	Description
6	Device Capture Settings Allowable capture time	The length of time available for data capture to the selected device storage medium (internal memory or USB device) is displayed here.
7	Device Capture Settings Name Type	Use this button to select the method for appending the file name. • Auto..... Create a date folder in the specified folder, and then create a date and time file in it. (Example: 2010-04-01_12-34-56.GBD) • User ..... The file name can be freely specified by the user.
8	Device Capture Settings Save Path	The save destination at the device for the captured data is selected here.
9	Ring Capture	Ring Capture is a function that captures data while deleting old data when a specified number of capture points is exceeded. This function sets the Ring Capture function to On or Off on the ZR-RX25 or ZR-RX45 unit. Refer to the User's Manual for details. * Ring Capture is supported only on this unit. Only normal capture is available on the PC. * This function is not available for the ZR-RX20 and ZR-RX40.
10	Ring Capt. Pts.	Sets the number of capture points when Ring Capture is performed. Refer to the User's Manual for details.
11	Ring Allowable Capture Time	Displays the time available for capture in Ring Capture. Refer to the User's Manual for details.
12	PC Capture Settings Format	Use this button to select the format of the data saved to the PC (personal computer). • Binary format (GBD) .....The data is saved as binary data. When compared with a CSV file, the file size is somewhat small. • Text format (CSV) .....The data is saved as text data in a format that can be displayed in Excel.
13	PC Capture Settings Name Type	Use this button to select the method for appending the file name. • Auto..... A folder with the date as the file name is created within the specified folder, and then a file with the date and time as the file name is created within the newly-created folder. (Example: Device1_2010-04-01_12-34-56.GBD) • User ..... The file name can be freely specified by the user.
14	PC Capture Settings Save Path	The save destination at the PC (personal computer) for the captured data is selected here.
15	PC Capture Settings Create Backup File	To enable this function, click the checkbox to display the check mark. The backup file is created at the same location as that specified in Item 14 "Save Path" above. The "_bk" file extension is appended to the file name.
16	PC Capture Settings Backup Interval	Use this button to select the backup interval. During data capture, a backup data file is created at the specified intervals. If all the backup files are linked, the data will be same as that of the original data. (1/2/6/12/24(h)) * A fluctuation of about 10 seconds will be generated in the backup interval. Therefore, the data size of a backup file fluctuates to some degree. Since there is no loss of data, however, you can concatenate backup files to obtain data equivalent to that of one backup file that you would obtain from continuous capture.

Trigger/Alarm Settings

Settings such as the trigger start condition, stop condition, alarm settings, and those for sending email are made at this screen.



No.	Name	Description
1	Trigger Start/Stop Condition	Use this button to select the trigger start(stop) condition. • Off ..... There is no data capture start condition. (There is no stop condition.) • Level ..... Data capture starts(stops) when the desired channel reaches the specified level value. • Alarm..... Data capture starts(stops) when the specified alarm occurs. * Available only for the ZR-RX25, ZR-RX45, and ZR-RX40. • Date ..... Data capture starts(stops) at the specified date and time. * Settings are available only if Repeated Capture is Off. * Settings are not transmitted to or received from this unit. • Time ..... Data capture starts(stops) at the specified time. * Settings are available only if Repeated Capture is On. * Settings are not transmitted to or received from this unit. • External..... Data capture starts(stops) with the external terminal signal. Data capture starts when the external trigger signal detects a falling of about 2.5V or less. • Week..... Starts (stops) capture when the specified day of the week arrives. * Available only for the ZR-RX25 and ZR-RX45. • Defined Time..... Starts (stops) capture when a specified length of time elapses. * The starting function is available only for the ZR-RX25 and ZR-RX45.
2	Level Condition	If "Level" has been selected for the start(stop) condition, make the required level settings here. Refer to "Trigger Level Condition" (p.51) for details.
3	Alarm Condition	If "Alarm" has been selected for the trigger start(stop) condition, set the alarm number here. Select an alarm number between 1 and 4. This setting is not available for ZR-RX20.
4	Week Settings	Sets the day of the week when the trigger start (stop) condition is "Week."

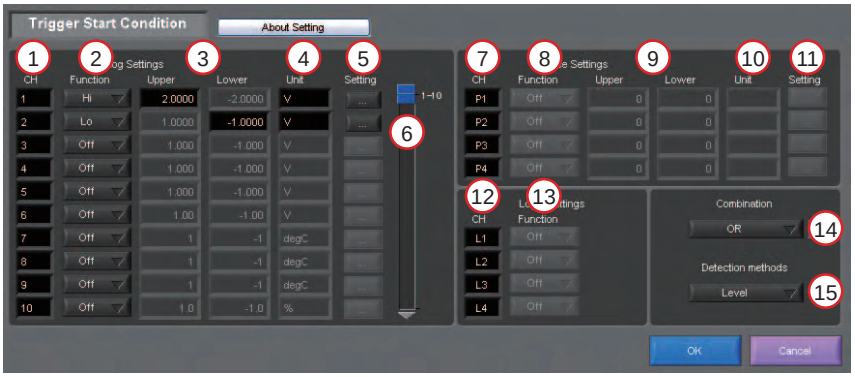
No.	Name	Description
5	Date Settings	Sets the Date for starting (stopping) the capture on a specified day of the week when the trigger start (stop) condition is "Date", "Time" and "Week".
6	Repeat	If On has been selected, the device proceeds to perform the next data capture operation after a start(stop) trigger has been generated. * Does not transmit or receive the settings to or from this unit. This unit is always Off and the file name does not include "REP."
7	Alarm Condition	Use this button to make the alarm level settings for each input.
8	Alarm Hold	This parameter specifies whether to maintain or clear the alarm status. • On ..... Once an alarm has been generated, the alarm status is maintained. The alarm generated on each channel is retained together with the alarm output status. To clear the alarm status, click the "Alarm Clear" button displayed in the "Alarm Screen". • Off ..... The alarm generated status is not maintained. If the alarm status is canceled, the alarm status and alarm output for each channel are canceled.
9	Send Email when Alarm is Generated	This button to set the conditions for sending an email. An email can be sent when an alarm has been generated. (However, an email sending environment must be enabled.) * Sends mail only during capture.

Note

When the sampling is set to the External, the start trigger and the stop trigger cannot be set to the external at the same time. Also when the start trigger or the stop trigger is set to the External, if the sampling is set to the External, the start trigger or the stop trigger is force set to Off.

Trigger Level Condition

If "Level" has been selected for the Trigger setting, the "Trigger Start/Stop Condition" settings must be made.



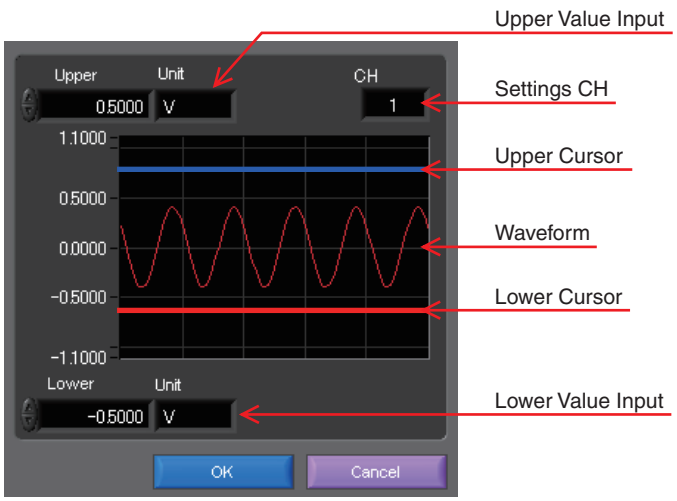
No.	Name	Description
1	CH	The channel numbers are displayed here.
2	Function	Use this button to select the trigger level detection mode. • Off ..... Disabled • Hi..... A trigger is generated if the input signal is above the specified level. • Lo ..... A trigger is generated if the input signal is below the specified level. • WinIn..... A trigger is generated if the input signal comes between the specified levels. • WinOut ..... A trigger is generated if the input signal goes outside the specified levels.

No.	Name	Description
3	Upper/Lower	The level settings are displayed here.
4	Unit	The unit is displayed here.
5	Setting	Click this button to make the level settings.
6	Switch CH	Use this slider to select 10 channels to perform the settings. * Not available for the ZR-RX20 and ZR-RX25.
7	Pulse CH	The channel numbers for pulses are displayed here.
8	Pulse Function	Use this button to select the pulse level detection mode. (Same as Analog)
9	Pulse Upper/Lower	The level settings are displayed here.
10	Pulse Unit	The unit is displayed here.
11	Pulse Settings	Click this button to make the pulse settings.
12	Logic CH	The channel numbers for logics are displayed here.
13	Logic Function	Use this button to select the logic setting. • Off .....Disabled • H .....Detection is performed when the signal is rising. • L .....Detection is performed when the signal is falling.
14	Combination	Use this button to set the combination of configured triggers. • OR.....Data capture starts (stops) when one of the configured trigger conditions is true. • AND .....Data capture starts (stops) when all of the configured trigger conditions are true.
15	Detection methods	Sets the detection method of a trigger. * Available only for the ZR-RX25 and ZR-RX45. • Level .....Each condition is Level operation. • Edge.....Each condition is Edge operation. Refer to "Level Detection and Edge Detection" (p.53) for details.

Trigger Level Settings Screen

This screen is used to make the level settings to detect a trigger.

To make the settings, you input numerical values directly or use a cursor.

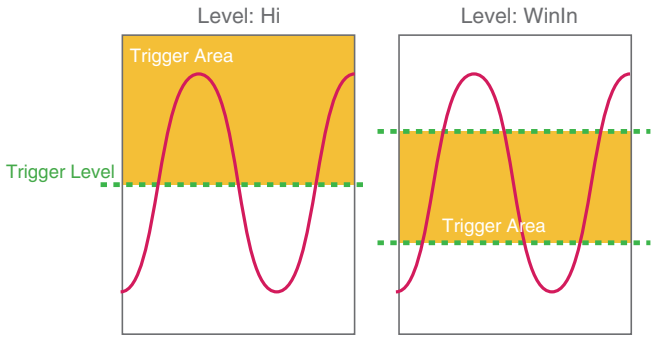


Level Detection and Edge Detection

To detect a trigger, you can select level detection or edge detection.

Level Detection:

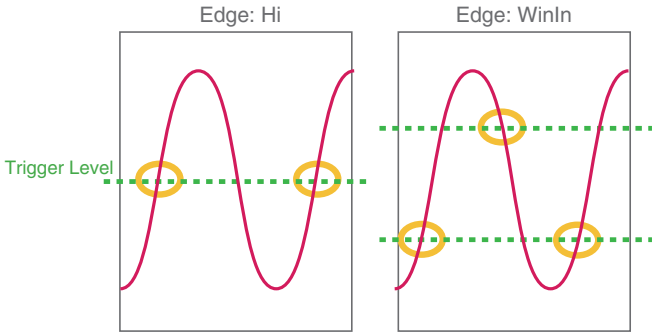
In the level detection, a trigger is detected when an input signal is above/below the specified level.



Edge Detection:

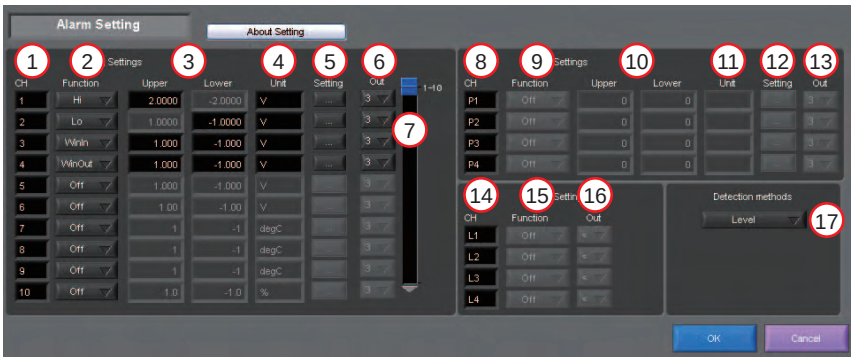
In the edge detection, a trigger is detected when an input signal is above/below the specified level.

Even if an input signal reached the detection level before, a trigger is not detected unless it reaches the level again after it is outside.



Alarm Condition

The alarm level settings for each input are made at this screen.



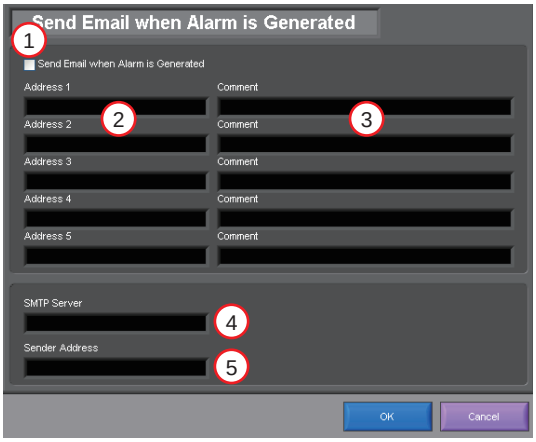
No.	Name	Description
1	CH	The channel numbers are displayed.
2	Function	Select the alarm level detection mode. • Off .....Disabled. • Hi.....An alarm is generated if the input signal is above the specified level. • Lo .....An alarm is generated if the input signal is below the specified level. • WinIn.....An alarm is generated if the input signal comes between the specified levels. • WinOut.....An alarm is generated if the input signal goes outside the specified levels.
3	Upper/Lower	The level settings are displayed here.
4	Unit	The unit is displayed here.
5	Setting	Click this button to make the level settings.
6	Output	Set the terminal that outputs an alarm. It is selected out of the device's four alarm output terminals. OR is applied to output of the terminal for each channel.
7	Switch CH	Use this slider to select 10 channels to perform the settings. * Not available for the ZR-RX20 and ZR-RX25.
8	Pulse CH	The channel numbers for pulses are displayed here.
9	Pulse Function	Use this button to select the pulse level detection mode. (Same as Analog)
10	Pulse Upper/Lower	The level settings are displayed here.
11	Pulse Unit	The unit is displayed here.
12	Pulse Settings	Click this button to make the pulse settings.
13	Pulse Output	Set the terminal that outputs an alarm. It is selected out of the device's four alarm output terminals. OR is applied to output of the terminal for each channel.
14	Logic CH	The channel numbers for logics are displayed here.
15	Logic Function	Use this button to select the logic setting. • Off .....Disabled • H .....Detection is performed when the signal is rising. • L .....Detection is performed when the signal is falling. Refer to "Trigger Level Condition" (p.51) for details.

No.	Name	Description
16	Logic Output	Set the terminal that outputs an alarm. It is selected out of the device's four alarm output terminals. OR is applied to output of the terminal for each channel.
17	Detection methods	Sets the detection method of a alarm. * Available only for the ZR-RX25 and ZR-RX45. • Level .....Each condition is Level operation. • Edge.....Each condition is Edge operation. Refer to "Level Detection and Edge Detection" (p.53) for details.

Send Email when Alarm is Generated

An email can be sent to a specified email address (or addresses) when an alarm is generated.

(An email sending environment must be enabled.)



No.	Name	Description
1	Send Email when Alarm is Generated	To send an email when an alarm has been generated, click the checkbox to insert a check
2	Address(s)	Enter the email address.
3	Comment	Enter the Comment.
4	SMTP Server	Enter the SMTP server name or address.
5	Sender address	Enter the sender email address.

Note

The mail send function is available only during capture. No mail is sent even if an alarm is generated during the Free Running status.

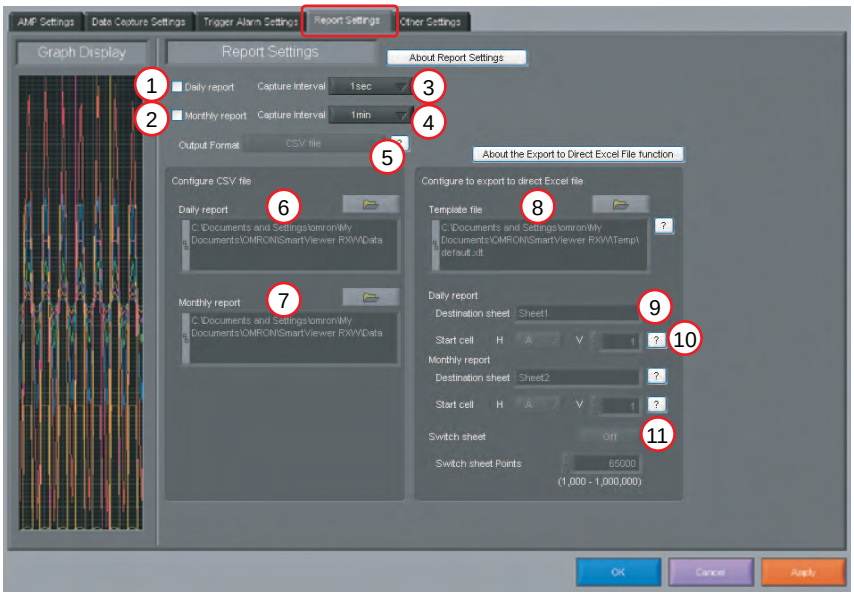
Report Settings

The daily report and monthly report settings, as well as the Direct to Excel settings, are made at this screen.

The daily report and monthly report are created as separate CSV files at capture intervals that are separate from those of the captured data.

The Export to Direct Excel File function transfers data in real time to an Excel file as it is being captured.

If a template is used for the Excel file, waveforms can also be drawn in Excel in real time.

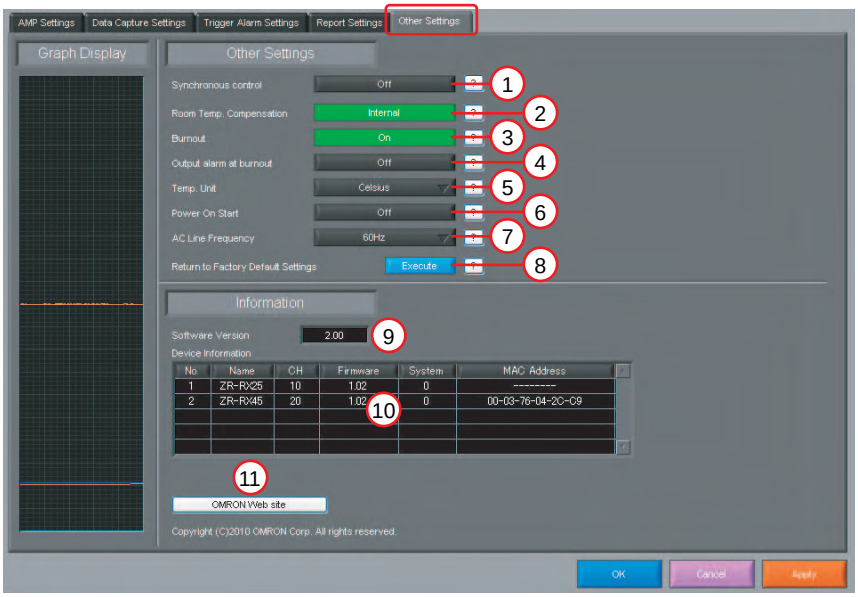


No.	Name	Description
1	Daily report	Click this checkbox to enter a check and enable the Daily report function.
2	Monthly report	Click this checkbox to enter a check and enable the Monthly report function.
3	Daily report Capture Interval	Use this button to select the daily capture interval. 100/200/500msec/1/5/10/30sec/1/5/10/30min. Data is captured at the sampling interval when the settings are faster than the sampling interval.
4	Monthly report Capture Interval	Use this button to select the monthly capture interval. Available settings are 1/5/10/30min/1/2/6/12/24hours. Data is captured at the sampling interval when the settings are faster than the sampling interval.
5	Output Format	Use this button to select the output format for the report(s). • Save as CSV batch files ..... The data is saved as CSV batch files. • Export to direct Excel file ..... The captured data is exported directly to Excel. If a template file that was created in Excel is used, an original report can be created in real time. The template files that were provided as standard accessories can also be used. * EXCEL must be installed to use this function. * Transfer of 32000 points or more is disabled if a graph is used in the template.
6	Configure CSV file: Daily report	This parameter is used to specify the save destination for the Daily report.
7	Configure CSV file: Monthly report	This parameter is used to specify the save destination for the Monthly report.

No.	Name	Description
8	Template file	The template file settings for the Export to Direct Excel File function are made here. Files with the "xlt" and "xls" extensions can be used. Template files are provided as standard in the "Temp" folder that is installed with this software.
9	Destination sheet	This parameter is used to specify the name of the specified template sheet.
10	Start cell	This parameter is used to specify the start position on the sheet from which to transfer data.
11	Switch sheet	When the specified number of points is reached, data is transferred to a different sheet. * When data is transferred to a different sheet, the graph or other element may not work correctly. * EXCEL versions before 2007: Supports display up to Row 65536. * EXCEL 2007 and later versions: Supports display up to Row 1048576. * Transfer of 32000 points or more is disabled if a graph is used in the template.

Other Settings

This screen is used to make various other settings and to display information.

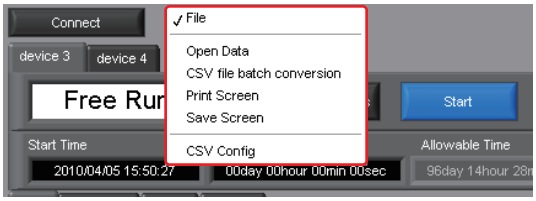


No.	Name	Description
1	Synchronous control	When multiple devices are connected, measurement starts on all ZR-RX25/ZR-RX45 with the synchronous control settings ON once measurement is started on one device. The same is true for finishing a measurement. Trigger and capture settings operate at their own configured values. (Triggers or samplings cannot be synchronized.)
2	Room Temp. Compensation	This parameter is used when thermocouples are used to perform temperature measurement. When using this device for room temperature compensation, select Internal.(Always select Internal for this setting.)
3	Burnout	Set to On to regularly check a thermocouple sensor line break. If a thermocouple is connected parallel with other measurement devices, please set this to Off as it may affect the other devices. When a sensor line break is detected, "BURNOUT" message appears.
4	Output alarm at burnout	When set to On, an alarm is output when a burnout has occurred.

No.	Name	Description
5	Temp. Unit	The display unit can be switched between Celsius and Fahrenheit.
6	Power On Start	Data capture starts automatically as soon as the power to the device is turned on. This setting can only be specified for data capture to the device. If On has been selected, select "Save the settings to the device" when exiting this software.
7	AC Line Frequency	Set the voltage frequency to suit the area where the device will be used. Be sure to select the correct frequency, as an incorrect setting affects the noise reduction capability. The noise on the power source can be eliminated at the following sampling rates: 10 channels or less : 500ms or slower 20 channels or less : 1s or slower 50 channels or less : 2s or slower 100 channels or less : 5s or slower 200 channels or less : 10s or slower
8	Return to Factory Default Settings	Click this button to return the settings to the default values.
9	Software Version	The software version is displayed here.
10	Device Information	Information relating to the connected device is displayed here.
11	OMRON Web site	Click this button to access the OMRON web site.

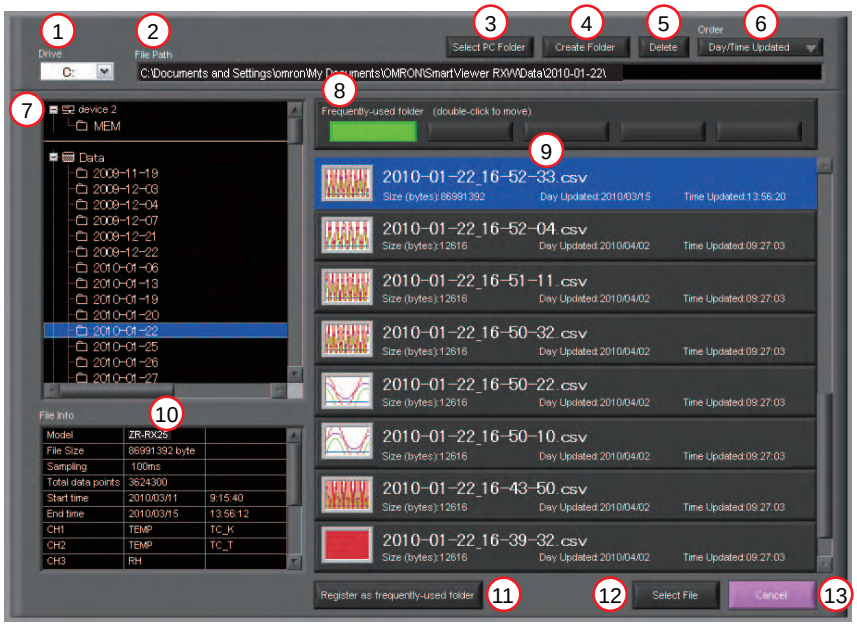
FILE menu

The FILE menu provides replay, CSV conversion, printing, and screen saving of captured data.



Open Data

Replays data captured to the PC or device unit. Select "Open Data" to open the file selection screen (See figure below). Select a file to be replayed.



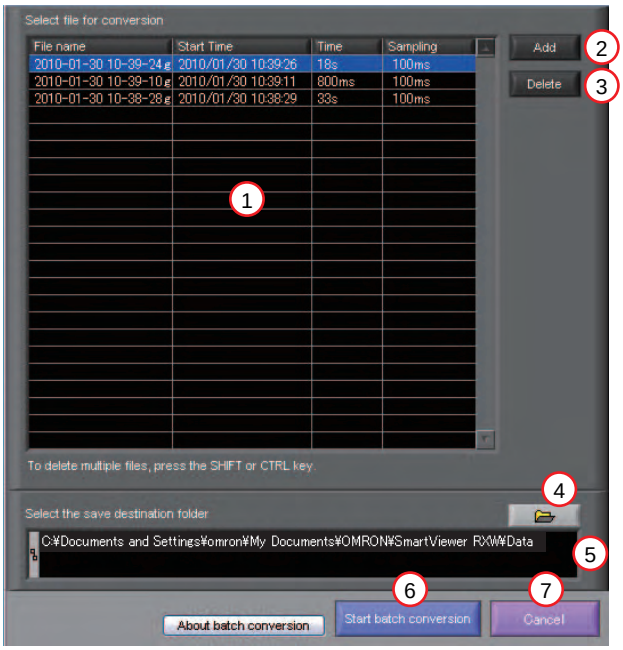
No.	Name	Description
1	Drive	Use this button to select the appropriate PC drive.
2	File Path	The file location is displayed here.
3	Select Folder	Click this button to select the folder that has data files.
4	Create Folder	Click this button to create a new folder.
5	Delete	Click this button to delete the selected file.
6	Order	Use this button to select the file arrangement order.
7	File Tree	The hierarchies of the device are displayed in a tree format. The "Data" is the default location to save files in this application. This is the Smart Viewer RXW folder in the user document folder.
8	Frequently-used folder	Use these buttons to select a frequently-used folder and move the file to that folder.Single click : SelectDouble click : Move.
9	File List	Files/folders in the current hierarchy are displayed.

No.	Name	Description
10	File Information	When you select binary or text data in the current hierarchy, file information is displayed.
11	Register as frequently-used folder	Click this button to register the currently displayed folder as one of the frequently-used folders. After registering, it is added to Item 5 "Frequently-used folder".
12	Select File	Click this button to select a file (display the file).
13	Cancel	Click this button to cancel the selected file.

Refer to "Replay Data" (p.63) for details on data replay.

CSV File Batch Conversion

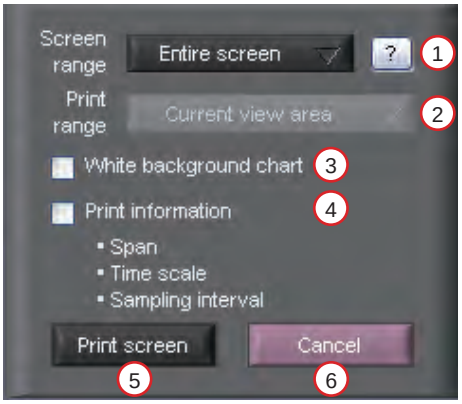
This function enables multiple GBD (binary data) files to be converted in a batch to CSV format files.



No.	Name	Description
1	List of converted files	The batch-converted files are displayed in a list.
2	Add	Click this button to add a file to the batch to be converted.
3	Delete	Click this button to remove a file from the batch to be converted. With the SHIFT or CTRL key pressed, you can select more than one file.
4	Save destination folder	Select the save destination for the batch-converted files here.
5	Save folder path	Displays the path of the save folder.
6	Start batch conversion	Click this button to start batch file conversion.
7	Cancel	Click this button to cancel the batch conversion operation and close the screen.

Print Screen

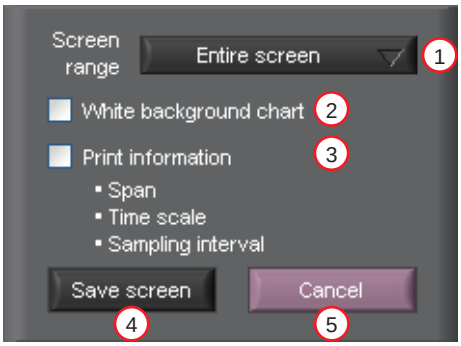
Prints the display screen on the printer. Printing is performed at the printer that has been selected as the default printer. If you change the printer, relaunch the software.



No.	Name	Description
1	Screen range	Select a screen range to be printed. • Entire screen..... Prints all of the displayed screen. • Waveform only ..... Prints only the waveform graph.
2	Print range	Selects a range to be printed. * Selection is available when the scroll is Off during capture, or during data replay. • Current view area.....Prints the current view area. • Between the cursor A and B ....Prints data between Cursors A and B in the time scale in which it is displayed. If the range is too large, data is printed on more than one sheet.
3	White background chart	Prints the waveform graph against a white background.
4	Print information	Prints the graph with information in it. The information to be printed is the span, Time/DIV, and sampling interval. Not all the channel information may be included depending on the number of channels to be displayed.
5	Print	Starts printing.
6	Cancel	Cancels printing.

Save Screen

To save the displayed screen as a BMP file.



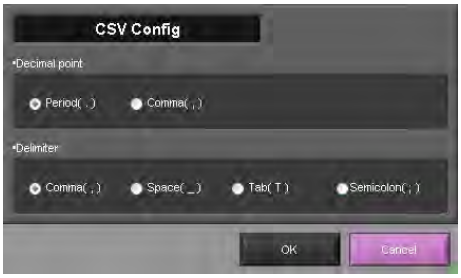
No.	Name	Description
1	Screen range	Selects a range of the screen to be saved in BMP. • Entire screen..... Saves all the displayed screen in BMP. • Waveform only ..... Saves only the waveform graph in BMP.
2	White background chart	Saves the waveform graph against a white background in BMP.
3	Print information	Saves the graph with information displayed in it in BMP. The information to be displayed is the span, Time/DIV, and sampling interval. * Not all the channel information may be included depending on the number of channels to be displayed.
4	Save	Starts saving the screen in BMP.
5	Cancel	Cancels saving the screen.

CSV Config

This setting is for the decimal point and the delimiter that are used in the CSV file for output.

Please set according to the setting of OS that actually used.

The CSV file which uses different decimal point and delimiter cannot be opened.



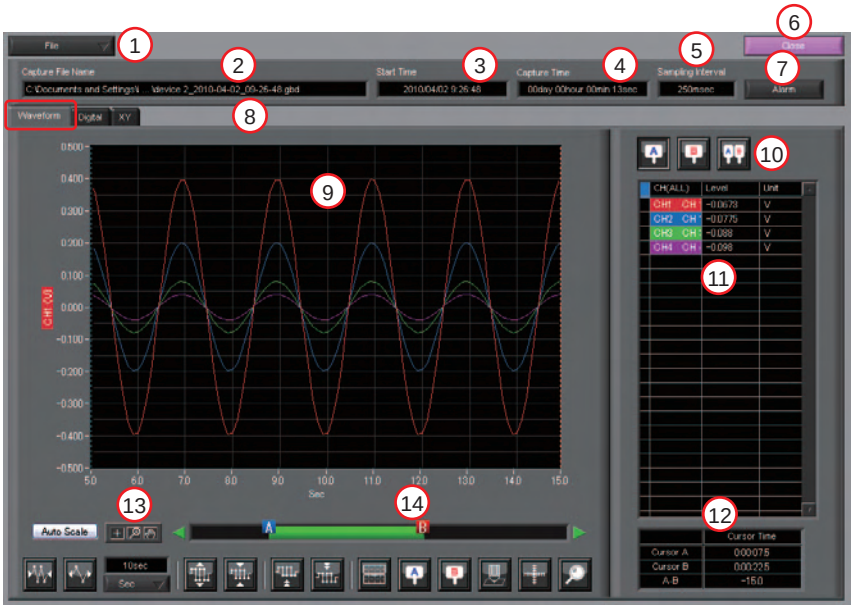
Note

Please set to the delimiter other than the comma (,) if the comma (,) is set to the decimal point.
Do not set comma (,) to both the decimal point and the delimiter at same time.

Replay Data

This section explains how to replay data that has been captured.

Y-T



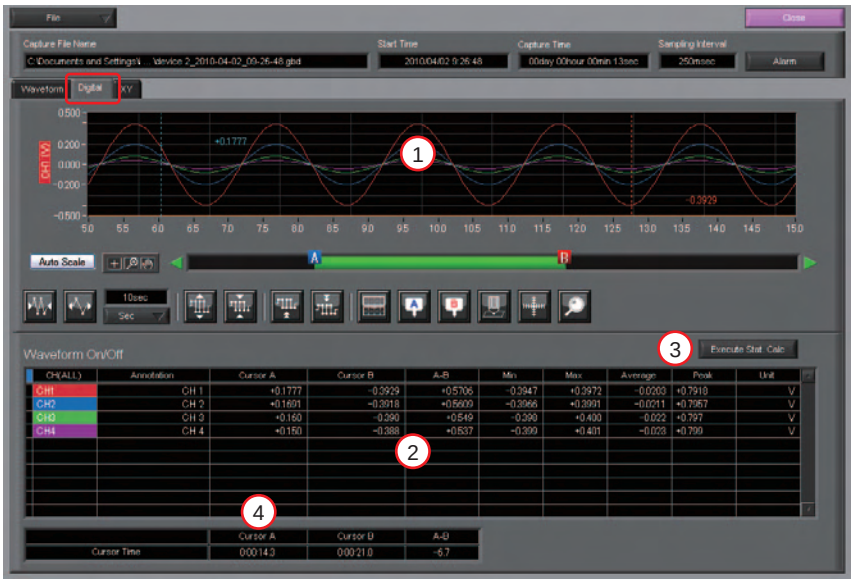
No.	Name	Description
1	File	Operations related to files are performed. • Open Data..... Click this button to open the screen for opening files captured to a PC or to the device. • Open in new window.... Opens a file in a new window. This function is useful when you compare captured waveforms. • Superimpose/Link ..... For the reviewing data, you can overwrite the waveform of other captured data or link and display the waveform. Refer to "Superimpose/Link" (p.66) for details. • Convert then Save ..... Click this button to convert data being replayed into GBD or CSV files and save them. Data cannot be saved during Free Running. Refer to "Convert then Save" (p.67) for details. • Print Screen ..... Click this button to print out a copy of the displayed screen. Printing is performed at the printer that has been selected as the default printer. If you change the printer, set the printer and then restart the software. Refer to "Print Screen" (p.61) for details. • Save Screen ..... Click this button to save the displayed screen as a BMP file.
2	Capture File Name	The name of the data capture file that is being replayed.
3	Start Time	The time at which data capture was started.
4	Capture Time	The data capture time
5	Sampling Interval	The sampling interval * EXT is displayed during external sampling.

No.	Name	Description
6	Close	Click this button to close the replay screen.
7	Alarm	Displays the status of the alarm port on Cursor A. Refer to "Alarm" (p.69) for details.
8	Display switch	Switches display modes. Refer to the page on each of the display modes for details.
9	Waveform Graph	The waveforms are displayed here.
10	Cursors	Selects which of the cursor values should be displayed in the digital display area. Up to three values (Cursor A, Cursor B, Cursor A-B) can be displayed at the same time.
11	Digital	The digital values are displayed in this area. Clicking on any of the CH numbers enables the waveform for that channel to be hidden/displayed. The channels for which an alarm has been generated are shown in red.
12	Cursor Time	The cursor times are displayed during data capture when Scroll Off has been selected.
13	Scale operations	Click this button to perform various settings for the waveform display. Refer to "Scale Operations" (p.67) for details.
14	Scroll bar	Moves waveform. Can also move Cursors A and B. Refer to "Scroll bar" (p.68) for details.

Digital

You can select "Digital" tab to switch to the digital display.

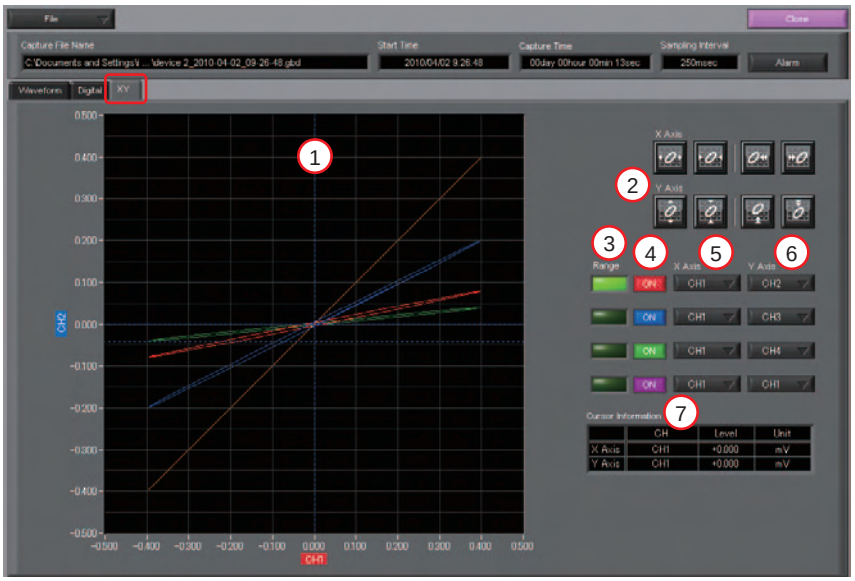
The Digital screen is used mainly to perform operations such as statistical calculation using the A and B cursors.



No.	Name	Description
1	Waveform Graph	The waveforms are displayed here.
2	Digital display	The cursor A and B levels, calculation results, and so forth are displayed here.
3	Execute Stat. Calc	Click this button to perform statistical calculation of the data between Cursors A and B.
4	Cursor Time	The cursor A and B times are displayed here.

XY

This function is used to display the data between the A and B cursors in an XY format. (Max 10000 points)

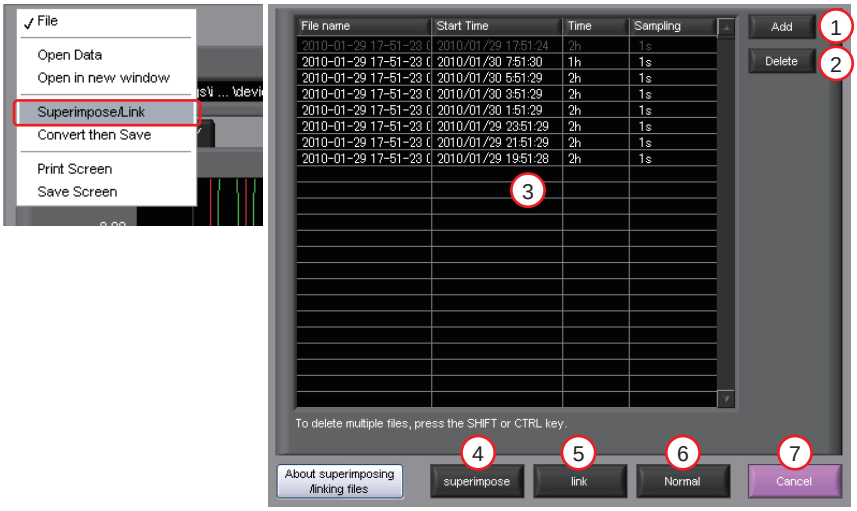


No.	Name	Description
1	X-Y Waveform Graph	The X-Y waveform graph is displayed here.
2	Waveform operation icons	Use these buttons to expand, shrink, or move X and Y axes.
3	Range	These buttons specify display of the scale values for the channels selected for the X and Y axes.
4	On/Off	Click these buttons to specify the display as ON or OFF.
5	X Axis	Use these buttons to select the channels for the X axes.
6	Y Axis	Use these buttons to select the channels for the Y axes.
7	Cursor Information	The cursor levels of the channels for which Range has been specified are shown here.

Superimpose/Link

This function enables multiple files to be superimposed on the display, or to be linked.

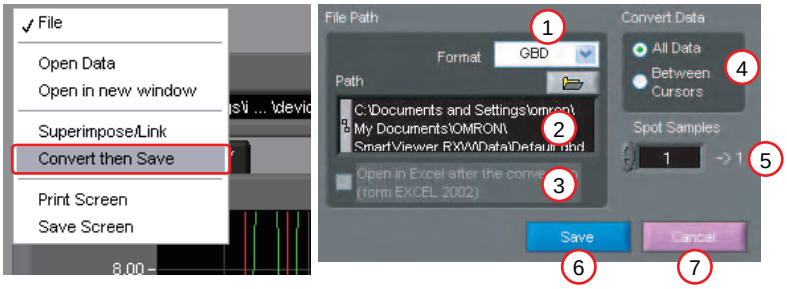
The data must be captured under the same conditions to be linked.



No.	Name	Description
1	Add	Click this button to add a file to those selected for the superimposing or linking operation.
2	Delete	Click this button to delete the added file from the list. With the SHIFT or CTRL key pressed, you can select more than one file.
3	File List	The files added to those selected for superimposing or linking are listed here.
4	Superimpose	Click this button to superimpose files. (* Overlapped data cannot be saved.)
5	Link	Click this button to link files. * Data with different capture conditions cannot be concatenated. When chain the files, the date and time for chained file is displayed based on the date and time of No. 1 file. Therefore the date and time which are for No. 2 and later files may not be same as actual measurement date and time.
6	Normal	Click this button to open the original file without performing any superimposing or linking operations.
7	Calcel	Click this button to close the screen.

Convert then Save

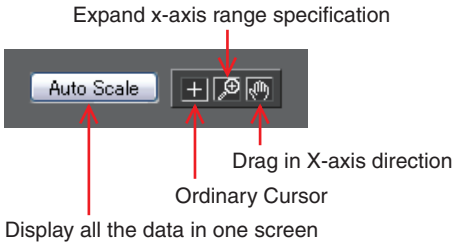
This function is used to convert replayed data to a different format (GBD, CSV), and to clip and save only the data between the cursors.



No.	Name	Description
1	Save format	Select a format to convert and save data. • GBD ..... binary data * CSV data cannot be converted to binary data. • CSV..... text data. This is a file format that can be opened with Microsoft's EXCEL and other software.
2	Path	Select a location to which you want to save data.
3	Open with EXCEL after the conversion	If this setting is selected, a file converted into CSV format is opened with EXCEL. * This setting cannot be selected if data is saved in binary format. * EXCEL must be installed to use this function. * This function is not available with EXCEL 2000 or any previous versions.
4	Select data to be converted	• All Data ..... All of the data being replayed is saved. • Between Cursor ..... Data between cursors A and B is saved.
5	Spot Samples	Spot samples are extracted when saving data. Ex) 1 → 1 :Spot samples are not extracted. Ex) 2 → 1 :One of two data points is extracted.
6	Save	Executes conversion and saving.
7	Cancel	Click to close the screen.

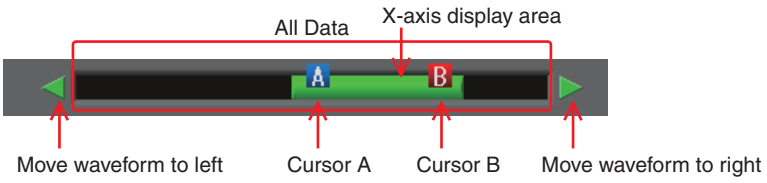
Scale Operations

Use this area to perform scale operations, enlarge the selected area, etc.



Scroll bar

Allows you to move waveforms and cursors.



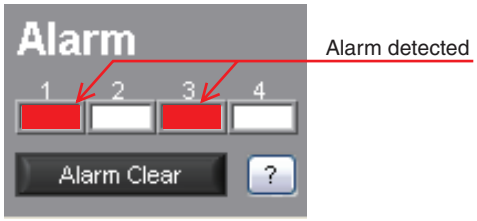
Other Functions

Alarm

The alarm output port status is displayed in this screen, together with the Alarm Clear button.

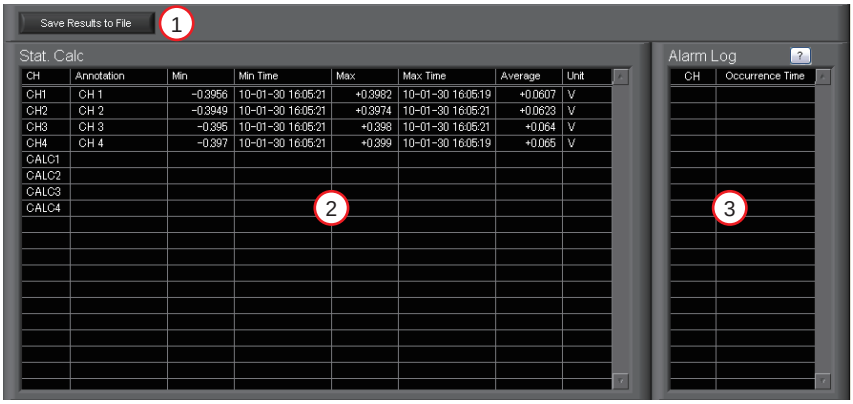
During replay, it shows the alarm output port status at the cursor point selected in the digital value display.

The Alarm Clear button is disabled during replay.



Statistics/Log

The statistical calculation and alarm log results are displayed in this screen.

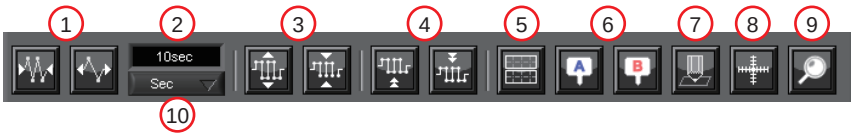


No.	Name	Description
1	Save results to a CSV	Saves the results of displayed statistical calculation and alarm history to a file.
2	Stat. Calc	The statistical calculation results are display here.
3	Alarm Log	The alarm log is displayed here. The alarm log shows only the most recent 100 alarms. When the number of alarms exceeds 100, the records will be erased from the oldest one.

About Icons

Y-T View (Y-T Zoom) provides control icons that allow you to perform intuitive operations.

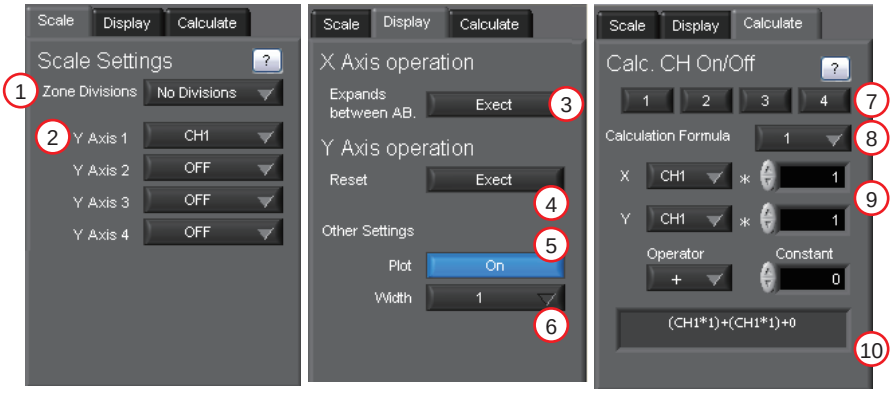
Each of the icons has the following functions:



No.	Name	Description
1	Expand/Shrink Time axis	Expands/Shrinks the time axis.
2	Display	Uses the display width of one screen to display time.
3	Expand/Shrink Y axis span	Expands/Shrinks the Y axis of the selected channel.
4	Move Y axis position	Click this icon to move up and move down the Y axis position for the selected channel.
5	Waveform Operation	Click this icon to open the screen to edit graph waveforms. Refer to "Waveform Operation" (p.71) for details.
6	Displays Cursor	Displays Cursor A/B in the waveform display.
7	Comment	Allows you to enter a comment on a waveform of a desired channel during capture or replay. The entered comment will be redisplayed when the file is opened again. Refer to "Input Comments" (p.72) for details.
8	Cursor direction switching	Switches the vertical and horizontal sides of a cursor.
9	Move/Search	During replay, click this icon to open the screen to move to the desired time or points and to search at any level. Refer to "Move/Search" (p.73) for details.
10	Switch Scale	Click this icon to switch between a relative time and an absolute time. Fixed to a point while external sampling setting is used. * Disables selection of absolute time in Free Running status.

Waveform Operation

Various types of waveform operations can be performed.



No.	Name	Description
Scale		
1	Zone Divisions	Divide the Y-T waveform graph into the upper side and the lower side. (No Divisions/2 Divisions/5 Divisions/10 Divisions)
2	Y Axis	When "Zone Divisions" is set to "No Divisions", up to four Y axis ranges can be displayed.
Display		
3	Expands between A-B	Expands data between Cursors A and B when the scroll is stopped during capture, or during replay. * The expansion in the Y-axis direction is not available.
4	Y Axis Operation Reset	Click this button to revert the values set in the Y axis span and position to the default values. The default values are the same values as those of when switching the ranges.
5	Plot	Click this button to display plot marks at the actual sample points on the waveforms.
6	Line Width	Change the line width of the waveforms. (1/2/3/4/5) * The line may be thicker than the selected number of dots due to circumstances regarding input signals.
Calculation		
7	Calculation CH On/Off	Use these buttons to set calculations 1-4 to On/Off. On : Calculation results are shown as waveforms and digital values. Off : Do not perform calculations. The calculation results are only shown in Y-T display, and do not affect the captured data.
8	Calculation channel X/Y	Sets the calculation channel for which calculation is to be set (* The unit conforms to CH X.)
9	Calculation Formula	Use this button to set the variable for a linear expression between channels. A • CH X * B • CH Y + C The expression you set appears at the bottom of this window. (A and B are arbitrary coefficients. * is an arithmetic operation (+-x÷). X and Y are arbitrary channels, and C is an arbitrary constant.)
10	Expression	Displays the calculation specified in the Expression setting.

Input Comments

Click this icon to input a comment above the waveform of the desired channel during a data capture (replay) operation.

If the scroll is ON, the input position is at the "Comment Input" in the upper part of a waveform. If the scroll is OFF, it is the position of Cursor A.

No.	Name	Description
1	CH	Select a channel for entering a comment.
2	Comment input/select	Enters a comment. Up to 20 comments can be entered. If you change a position where a comment has already been entered, the entered comment will also be changed.
3	Input	Click this button to input the comment..
4	Delete	Click this button to delete the comment that was input

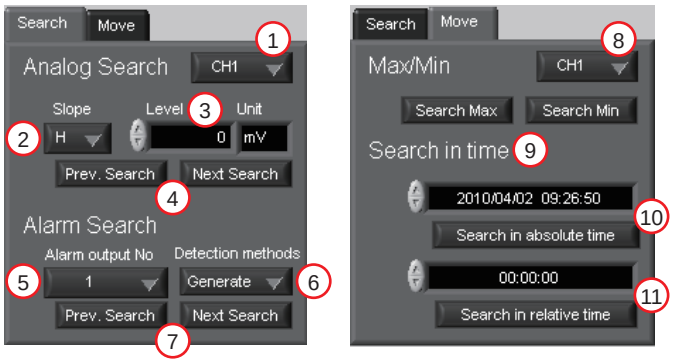
Note

Comments will be displayed based on the scale specified at the start of the data capture operation.If the Y-axis scale is changed during data capture, the input comments will be off positioned when displayed on the replay screen. To display the comments above the waveform, change the Y-axis scale after the replay.

Move/Search

During replay, cursor A and the waveforms can be moved to the desired position.

You select how to move them and perform the operation with the "Move" tab.



No.	Name	Description
Search		
1	CH	Use this button to select the CH to be searched.
2	Slope	Use this button to select the slope to use for performing the search. H : Search for a rising signal. L : Search for a falling signal.
3	Level	Use this button to set the search level.
4	Prev./Next Search	Performs analog search. The judgment criteria of search is an edge. • Find Previous: Search in the past direction • Find Next: Search in the future direction
5	Alarm	This parameter is used to specify the alarm port number. This setting is not available for ZR-RX20.
6	Generated/Cleared	Use this button to set the alarm status in which searches are performed. Generated : Performs search when an alarm is generated. Cleared : Performs search when an alarm is cleared.
7	Prev./Next Search	Performs alarm search. The judgment criteria of search is an edge. • Find Previous: Search in the past direction • Find Next: Search in the future direction
Move		
8	CH	Use this button to select the CH to be moved.
9	Search Max/Min	Searches for the maximum and minimum values of the specified channel. • Find Maximum: Searches for the maximum value. • Find Minimum: Searches for the minimum value.
10	Serch in absolute time	Search the specified time/date. * This function is not available for external sampling data.
11	Search in relative time	Search the specified time. The searched time is the relative time from when data capture was started. * This function is not available for external sampling data.

Operating Procedure

This chapter describes the basic operating procedure.

The operating procedure starts with the software and the device in the connected status.

For the connection procedure, see Section "Connecting to a PC (Personal Computer)" (p.11).

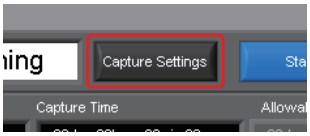
The settings that are not addressed in the following sections are the factory default settings.

Capture Settings

Description

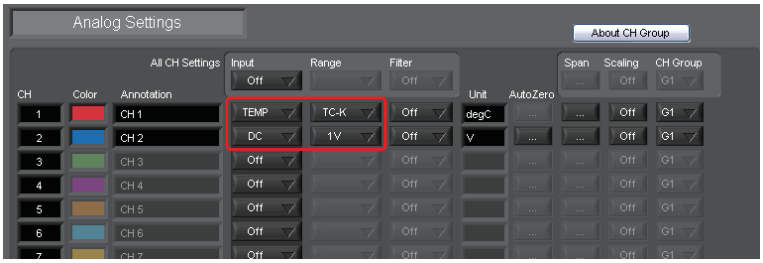
1	Settings related to AMP	CH1: Input = TEMP, Range = TC-K, Filter = Off, Scaling = Off CH2: Input = DC, Range = 1V, Filter = Off Set to other channels to Off.
2	Settings related to data capture	Sampling Interval = 1sec Device Capture Destination: Internal Memory PC Capture Format: Binary Data

After connecting to the device, press the "Capture Settings" button on the main screen.



Settings related to AMP

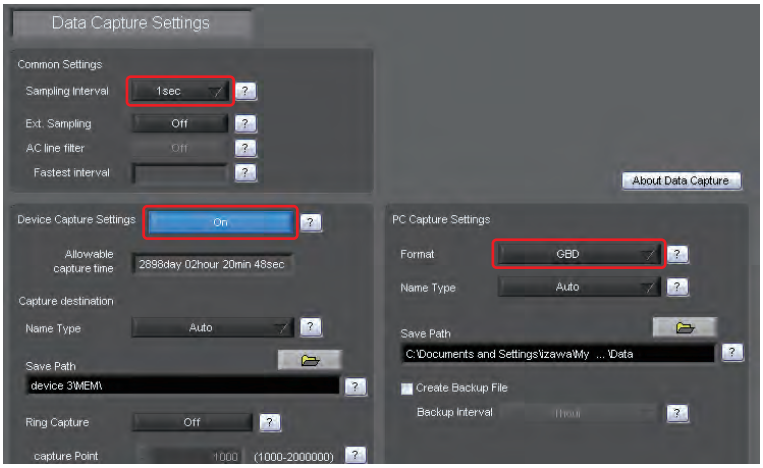
The settings for CH1 and CH2 are made according to the setting options. Set other channels to "Off".



Settings related to data capture

The settings related to data capture are made according to the setting options.

- Select the "Data Capture Settings" tab.
- Set "Sampling Interval" to 1sec.
- Sets the device capture setting of this unit to On.
- Set "Format" of "PC Capture Settings" to "Binary Data(GBD)".



With the above setting, data is saved to the internal memory and PC at the sampling interval of 1 second.

Start

Click the "Start" button to start capturing actual data.

Displaying Past Data during a Data Capture Operation

If Off is selected for the waveform "Scroll" button during a data capture operation, past data can be viewed.

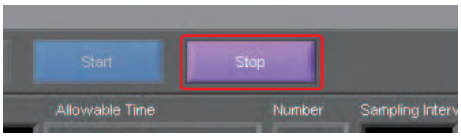
The scrolling operation will be halted, enabling past data to be displayed in the scroll bar.

Moreover, moving the cursors enables the cursor level values to be viewed.

To return to the waveform scrolling operation, click the "Scroll" button once again.

Stop

Click the "Stop" button. Data capture stops, and the device returns to the Free Running status.



When capture ends, the screen automatically switches to the replay status.

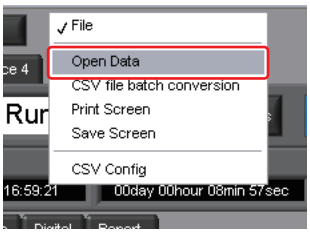
Replay Data

Replays data captured to the PC or this unit. Data captured using either this software or this unit can be replayed. The formats supported for replay are binary data (GBD) and text data (CSV).

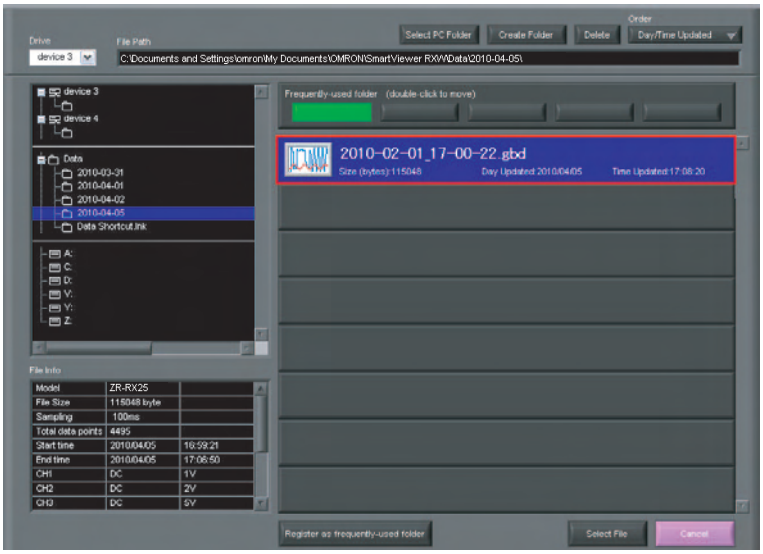
This section describes replaying binary data captured to the PC and performing basic operations.

Replaying File

In the "File" on the main screen, select the "Open Data".



The screen to select a file opens. Select a file from the location where it is saved, and press the "Select".



Waveform display

The selected file is read, and the waveforms are displayed.

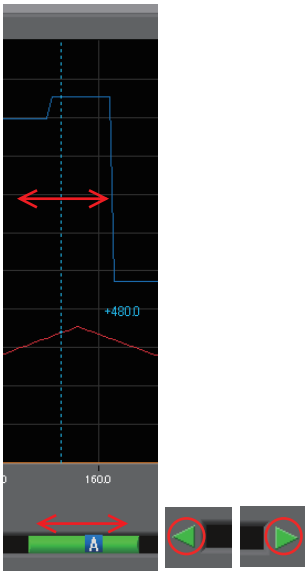
Cursor Operations

During replay, two cursors A and B are provided and can be moved to any position in the waveforms.

You can drug the cursors on the waveforms to move them.

Also, you can use the icon of the scroll bar to move them.

Also, if the rectangle shaped button which is located at left/right edge of the scroll bar, the scroll is done in 1 div step.



Input Comments

A comment can be input at the position above the desired channel of cursor A.

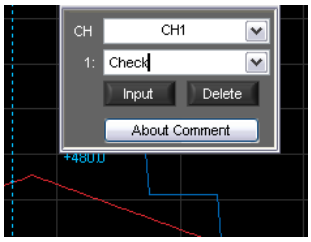
The input comment will be saved even after a file is closed. Next time the file is open, it is displayed in the same location.

(Only when the data is captured to the PC).

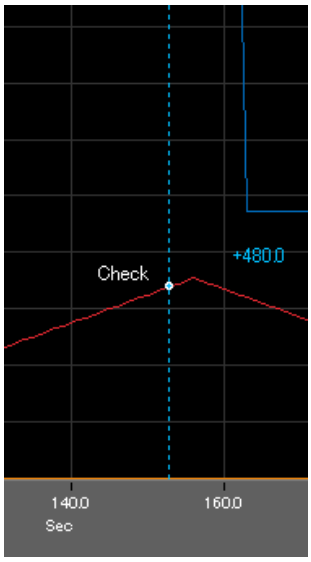
Select the "Comment" icon.

Here, we will input a comment "Check" above the waveform for CH1.

After you input the string, press the "Input" button.



Now, the comment is input.



Data Search

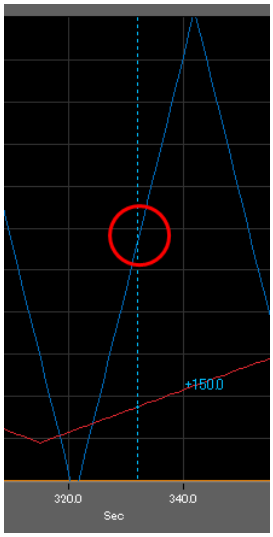
Search is performed to check the location where data is above/below the specified value. Then, a cursor and waveforms are moved to the location.

Here, we will search for a rising signal and the location above 0V for CH2.

Select "Move/Search" icon.

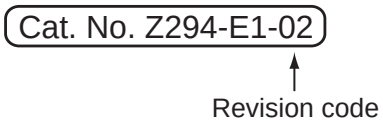
1. Set CH to CH 2.
2. Set the search conditions to "Hi" (rising signal).
3. Input 0V.
4. Press the "Next Search" to search the current cursor in the forward direction.

The location above 0 V is located, and cursor A and the waveform are moved.



Revision History

A manual revision code appears as a suffix to the catalog number at the bottom of the front and back covers of this manual.



Revision code	Date	Revised contents
01	November 2009	Original production
02	September 2010	Software upgrade according to model addition that can be connected (Ver.2.0)

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